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Biographical sketch of Dr. Dudley Allen Sargent...

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A BIOGRAPHICAL SKETCH OF DR. DUDLEY ALLEN SARGENT WITH EMPHASIS UPON HIS ESTABLISHMENT AND DEVELOPMENT OF THE SARGENT SCHOOL OF PHYSICAL EDUCATION

Submitted by

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TABLE OF CONTENTS

		Page
Chapter I	EARLY DAYS	1
Chapter II	EDUCATION	9
Chapter III	NEW YORK	17
Chapter IV	THE HEMENWAY GYMNASIUM	22
Chapter V	STRENGTH TESTS	35
Chapter VI	THE HARVARD SUMMER SCHOOL OF PHYSICAL EDUCATION	45
Chapter VII	THE SARGENT SCHOOL OF PHYSICAL EDUCATION	53
Chapter VIII	SUMMARY	69

INDEX FOR APPENDIX

Figure 1	Bowdoin College Gymnastic Exhibition.
Figure 2	Bowdoin College Gymnastic Exhibition for the Benefit of the Bowdoin Navy.
Figure 3	Intercollegiate Strength Test.
Figure 3A	Intercollegiate Strength Test and Measurements.
Figure 4	Universal Test for Strength, Speed, and Endurance.
Figure 5	Physical Test of a Man, or, Pep Test.
Figure 6	The Sanatory Gymnasium Showing the Mansard Roof.
Figure 7	Floor Plan of the Sanatory Gymnasium.
Figure 8	Early Circular for the Sanatory Gymnasium.
Figure 9	Circular for the Sanatory Gymnasium, 1888.
Figure 10	Second Arena Program, 1912.

Chapter I

EARLY DAYS

Dudley Allen Sargent was born in Belfast, Maine, on September 28, 1849. His father, Benjamin Sargent, was a ship's carpenter and spar maker in Belfast. From this strong and vigorous man Dudley inherited a good physique, a strong will, and a fondness for physical activity. From his mother, Caroline J. Rogers, Dudley inherited a sensitiveness toward people and toward his environment, and a love of good reading. When Dudley was seven, his father died as the result of an accident, and he was sent to Hingham, Massachusetts, to live with one of his father's relatives. His first schooling took place in Hingham, and one of his earliest memories of school days was that of his punishment for not being able to sit still. He was made to stand beside the teacher's desk and to hold his arms out straight from his shoulders, parallel to the floor. Soon after this episode, his guardians removed him from this school and entered him in a small private school.

In Hingham he had many opportunities to indulge his love of adventure. Although swimming, boating, skating, and snow-sliding were some of the sports in which he participated, he cared little for them unless there was an element of adventure, or an element of danger and uncertainty. Diving into shallow water--moving nearer and nearer shore until all but he lost their nerve,--running on ice-blocks in the old mill pond, breaking through the ice, borrowing boats and sailing the harbor, marooning themselves on some of the neighboring islands,

were some of the activities which engaged Sargent and his friends. The fleet of fishing vessels and the fishermen who made Hingham their headquarters filled all the young boys with a romantic desire to go to sea, and young Dudley was no exception. No doubt it was this early desire which caused Sargent to ship with the Moses Eddy in 1864.

His first lesson in making a selection came at this tender age. On a trip to Cohasset he found a beach offering the wealth of a Croesus in the form of colored stones. He seized upon first one and then another stone, each one better than the last, but then the tragedy occurred. The only pocket in his little gingham suit gave way. He wanted every one of those stones--some for himself, some for his aunt, some for his grandmother--but his only pocket was gone. With the treasures of this world piled before him, he had to make a selection. He could take only what he could carry in his hands. No doubt it was this early start in making decisions which in later life made it easier for Dr. Sargent to discard those things which would bring temporary riches and retain those things which would permanently satisfy.

It was while he was in Hingham that Sargent started drawing. Although he had inherited some talent from his father, the drawing phase did not last long, but it did serve Dr. Sargent to good advantage twenty years later when he was designing gymnasium apparatus.

At the age of ten, Dudley returned to Belfast to live with his uncle and widowed mother, and his younger sister, Carrie. Dudley considered himself a man of the world because

he had visited the outside world, but he found that in school work he was not even up to the boys of his own age. He was placed in a grade in grammar school with boys two or three years younger than he. It was while he was in the Select School, whose curriculum allowed for no physical activity, that he started his first gymnastic innovations. With some of his friends he erected a horizontal bar on the lower common.

> "This horizontal bar was unique, however; for while all the apparatus at High School was made of wood, ours was iron. Its chief advantage was that it was small enough to grasp comfortably, and at the same time strong enough to support the weight of several bodies at one time. The wooden bars, though tough enough, had to be made too large for a comfortable grasp."[1]

This bar was not satisfactory in the winter, as the boys very quickly learned. In one winter contest the frost caused the iron to stick to the skin, and all the participants lost patches of skin from the palms of their hands. Lack of interest in school work, and restlessness caused by the Civil War, made Sargent leave school at the age of thirteen. He worked for his uncle with pick and shovel, for $1.50 a day, on a Government battery being constructed in East Belfast. A year later the batteries were completed and he returned to school where, for the first time, he began to take school work seriously. From the time that he did a man's work with a pick and shovel, he kept some kind of job, even after his

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1. Dudley Allen Sargent, Autobiography, p. 30.

return to school. He worked as janitor in the offices or stores of Belfast; he chopped wood, and was a lumberman for awhile; and he even undertook farming.

His variety of occupations gave him experience in many lines, but he desired something more permanent; in other words, he desired a profession. Since he had a natural liking for the sea, he did not hesitate at all when he had a chance to try the life of a sailor. On August 3, 1864, he shipped aboard the Moses Eddy with a salary of fourteen dollars a month. He describes his voyage as being most enlightening.

> "We had a captain, a mate, a cook, and a man before the mast. I was the 'man before the mast,' with duties which ranged from bow to stern, from keel to topmast. I found myself not only 'before' but also behind the mast, up and down the mast, and on top of the mast. But my strenuous experience filled out the nautical niche of my life and made me healthy and wise, if not wealthy."[1]

Seven weeks later he returned to Portland completely cured of any inclination to follow the sea.

In the winter of 1864, Sargent was transferred to the high school, where for the first time he came under the supervision of men teachers. Several of his friends went to a boarding school at Topsham, near Brunswick, and while there became very much interested in the gymnastic exhibitions at Bowdoin College. Upon their return to Belfast, they organized a gymnastic club, of which Dudley became a member. Since the need of working out of school hours prevented him from

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1. Ibid., p. 38.

practising with the other boys, he used the apparatus at odd moments whenever he was able to find the time. On one occasion, he and his friend broke a piece of apparatus, and, in accordance with the rules of the club, were expelled. Dudley then turned his uncle's barn into a temporary gymnasium and worked especially on the horizontal bar. He was more proficient than any of the other boys and quickly gained a reputation as a gymnast, not only among his cronies, but also among the townspeople for whom he gave his first public performance on February 16, 1867. The success of this led him to organize a company called "Sargent's Combination" and the group went to some of the neighboring cities and towns, where they were enthusiastically received. This Company came to an early end when one of its members absconded with the receipts, leaving Dudley to borrow money in order to get the group back to Belfast.

Many Belfast parents refused to allow their offsprings to associate with a boy who indulged in what they called "monkey shines." In spite of this social ostracism which gymnastic work seemed to cause, Dudley determined to concentrate upon the work for which he was best fitted. He started training to become a professional gymnast. A Belfast boy, Hurley, and Sargent perfected a group of tricks and stunts and then looked about for an engagement. Mr. Robert Chase, of Belfast, writes that when the manager of the Stone and Murray Circus saw them, they were allowed to perform as extras with the circus during its stay in Belfast. This success encouraged

the boys to accept an offer to perform with a variety show which went from town to town giving performances twice a day. This work was the same that Sargent had been doing in his barn at home, with the difference that now there was a constant change of scene. After a few weeks of travelling with this circus, interest palled due to monotony, and Sargent found that he did not have enough to do. To remedy this, he volunteered as an extra canvas man. Since the canvas man left before the performers in order to get the tents up in time, this new mode of travel allowed Sargent to "lie and meditate instead of sitting and bumping"[1] as he had done in the wagon seats. When the first of the month came around, there was no money in the treasury to pay their salaries. The two gymnasts pawned their trunks in order to get to Ogdensburg, where they met the Stone and Murray Circus and worked until the end of the season. Upon his return to Belfast, a complete outcast--a circus performer,--he gave up school altogether, laid out a course of reading for himself, bought new apparatus, and began a systematic training for a professional career. Sargent found few of his former companions interested in the intensive work which he now began. He felt that a Brother Act would be better from an audience point of view, and because he could not afford to hire a trained gymnast, it was necessary for him to find someone right in Belfast who would work with him. He started by encouraging the boys to develop strength by means of pulley-weights, and skill by means of adjusting

1. Ibid., p. 65.

the apparatus a few inches from the floor, and in this way he not only held a small following in Belfast, but also obtained excellent training for his work at Bowdoin. It was during this winter, too, that he rigged up a horizontal bar over the water so that, should he slip while learning one of his special tricks, he would not harm himself.

Toward the end of May, a circus friend offered Sargent a chance to go to one of the large cities for a four-weeks' engagement to do a bar and trapeze act with him. They travelled under assumed names, and the four weeks lengthened into four months. In the fall of 1868, he returned to Belfast determined to head for a college education.

With this hope for further education came the desire for a career in one of the "professions." Law was discarded among the first; ministry was considered seriously, but an unfortunate incident put an end to that hope. Sargent was still working for his uncle, and one Saturday night worked until after midnight. His description of the following Sunday in church explains why he was discouraged in the field of the Church.

> "On that fateful Sunday, I was sitting just in front of an open window. The balmy atmosphere of the day permeated my entire being. The bees outside and the minister inside droned pleasantly in chorus. Since engaging in my strenuous work for my uncle I had enjoyed only a few hours sleep. Softly and quietly I slipped off into a gentle doze. But as my head fell back, my eyes opened for an instant, and I looked up at one of the supporting rods. My reaction was instantaneous. I jumped forward and upward to grasp the rod. My awakening was rude and complete. I tried to recover myself, and in the effort nearly fell backward through the window. It was, of course, the automatic action of the muscles,

> which I had trained to protect myself in mid-air gymnastics, that made me jump for the bar on this most inopportune occasion. My performance created a disturbance which was never to be forgiven."[1]

A doctor's life attracted him next, and several of the doctors in Belfast encouraged him in this field by recommending books for him to read. In June, one of his friends at Bowdoin returned with the news of a possible vacancy in the gymnasium, and Sargent saw new worlds to conquer.

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1. Ibid., p. 85.

Chapter II

EDUCATION

When Sargent heard of the opening in the gymnasium at Bowdoin College, he determined to apply for the position. He collected letters of recommendation from many people, but the most useful one was from the Reverend Worcester Parker, Congregational minister in Belfast. Edwin Parker, Reverend Parker's son, was married to the daughter of Samuel Harris, the president of Bowdoin College. When President Harris visited Reverend Parker in Belfast, in July, 1869, Sargent was invited to call and meet the President. As a result of this interview, Sargent received the appointment of Director of Gymnastics at Bowdoin College, beginning in September for a salary of five dollars a week. Because Sargent's predecessor at Bowdoin had been a specialist in boxing, and had interested the students in it, President Harris felt that Sargent should have a basic knowledge in this sport. Thus, Sargent went to Boston, where he studied boxing with Tom Denny. At the same time he tried to find a teacher of wrestling, but since no one could recommend such a teacher, Sargent had to rely upon the intuitive knowledge which he had acquired during his training for acrobatic work. The college opened on September 28, 1869, Sargent's twentieth birthday.

The gymnasium which Sargent found at Bowdoin College was a low-studded, ramshackle building with floor space quite inadequate for anything but the most constrained exercise. All of the equipment in the gymnasium was of the heavyweight

class and was far too strenuous for the untrained man. One of Sargent's first tasks was to reduce the weight of the Indian clubs by turning them down and to reduce the weight of the weight pulleys by the use of a detachable pulley and a double length of rope. This simple device saved Sargent from a lawsuit, in the 1880's, when he was able to prove priority of introduction.

Before Sargent was fully accepted by the students, they "tried him out" in boxing. The son of his predecessor visited him one morning stating that he would like to try the gloves with him. During the workout, Sargent was lucky enough to land a fist in his opponent's face. At this crucial moment, there were knocks on the door. When Sargent went to open it, he found it was locked. The boys had placed a bet that Sargent would be "knocked out" within so many minutes, and when that time was up, they had battered at the door. When they came in and saw their champion with a bloody nose, Sargent's prestige rose, and from that day he was accepted by the student body.

In the Bowdoin College Catalogue of 1869-1870, Sargent's name appeared at the end of the faculty, set off from the other teachers, as Director of the Gymnasium. One of Sargent's duties as Director of the Gymnasium was to stage an exhibition toward the end of December.[1] Because Sargent had proved himself to the students' satisfaction, they were willing to work at whatever he desired. As a result of their

1. The 1871 program is reproduced in Figure 1 in the Appendix.

co-operation the exhibition was a well-balanced program consisting of exercises in light and heavy gymnastics, work on the bars, rings, and trapeze, a dumbbell drill, an Indian club drill, and one or two other events. This demonstration not only gave Sargent prestige with the President and faculty, but it also raised his salary from five dollars weekly to five hundred dollars yearly. He was given a janitor for the building and an appropriation for apparatus. In the 1870-1871 Catalogue, the department was given one short paragraph of description, and Sargent's name no longer was herded off by itself.

As soon as his work in the gymnasium was progressing smoothly, Sargent began to prepare to enter college, himself. He tutored with various men and then entered the college-preparatory class at the Brunswick High School. In the fall of 1872, Sargent entered Bowdoin College.

In 1872, attendance at the gymnasium five days a week was compulsory for everyone and military drill was required during the same term. Since this ruling caused a great deal of criticism, the next year the requirements were modified by allowing a student to choose between gymnastic and military exercises. To meet the requirement that every man take gymnastic exercise, it was necessary to obtain some new preparatory apparatus. Sargent felt that his work was to develop the latent strength of those men who had so far done no gymnastic work. To accomplish this, he rebuilt some of his old apparatus from the barn in Belfast, improved on the

old, and improvised new appliances with gratifying results. To give his enlarged classes graded work, so that he could hold the attention of both the expert and the beginner, greater floor space and more apparatus than the old gymnasium afforded was required. The authorities finally gave him the large, unfurnished, lower floor of Memorial Hall. Although the floor space was three times as much as before, the walls were unfinished, cloth screens served as windows, and it was impossible to heat the room. From December to March, the temperature never rose above freezing, and classes exercised with hands so cold, and fingers so numb, that they could not hold the Indian clubs. The iron handles of the chest weights were so cold that there was difficulty in dropping them without peeling the skin from the hands.

Competitive sports began to attract attention when compulsory gymnasium work was established. In 1872, baseball was the only organized athletic sport. Rowing became very popular after the Harvard Oxford International Match, in 1869. In order to develop a crew at Bowdoin, it was necessary to have expensive equipment, and so, in Portland, in April, 1872, the college gymnastic team gave its first exhibition for the benefit of the Bowdoin Navy.[1] Although crew became very popular, the necessary capital to maintain this sport was always the first matter for consideration. The Senior Class of '72 contributed the largest part of the boating expenses, and as a result, was entitled to representation in

1. Program reproduced in Appendix, Figure 2.

the boats, even though consideration of oarsmen by this means produced a weakened crew.

In 1874, Sargent's last year at Bowdoin, practically everyone elected gymnasium work, rather than military drill--due to the military rebellion which had taken place at Bowdoin the previous year. The gymnasium was opened at the beginning of the college year, and outdoor athletics were conducted as long as the weather permitted. Since the gymnasium was so cold and so drear during the winter months, it was decided to close the gymnasium for the winter term, and Sargent left Brunswick to work for three months in the Yale Gymnasium. In April, 1875, he returned to Brunswick to do not only the regular gymnastic work, but also supervise the college crew. Like his preparation at Belfast, his college work had been interrupted by gymnastics, too. Due to his two leaves of absence at Yale, and the necessity of spending from two to four hours in the gymnasium every day, Sargent found it a real task to keep up with his class--but he did manage to take his degree in 1875. Sargent won the English Department's four-year competition, with its prize of sixty dollars, for his senior oration, "Does Civilization Endanger Character?"

Just before commencement, Sargent made a report of his six years' work at Bowdoin, and laid out a tentative outline which he intended to carry out the next year. Part of the report follows:

> "I have been hampered considerably during the past year by the dearth of implements to work

> with. The usual misunderstanding concerning our running expenses, and our appropriation for apparatus has flourished....My salary for the past year I consider no compensation for my services. It was the same as that which I received upon assuming my present position here six years ago. Since that time, my Department has grown in size, the exercises have been made obligatory, my duties have been increased threefold, and my responsibilities fourfold. In spite of every opposition, I have succeeded in making the gymnasium a popular institution, and I now modestly, though firmly, declare that the system of physical culture pursued at Bowdoin today is second to none in the country....I will accept the position in physical culture for the next year at $1200. I will furnish my own apparatus, with my janitor, monitor, and assistants, and stand all other expenses incidental to running the gymnasium--except for heating and repairing the building."[1]

Bowdoin received his report, considered it extreme, and rejected his offer. Young Sargent returned to Belfast, for a summer vacation--where he did nothing but eat and sleep for about four weeks. An accident which depressed the lower part of Sargent's breast bone, and caused him a great deal of trouble, decided him to make plans to go to Yale and study medicine. He entered Yale in September, 1875.

Previously, Sargent had begun his instruction in the Yale Gymnasium in January, 1873, while on leave from Bowdoin during the winter term. As was the custom, attendance was voluntary, and those individuals who were natural athletes spent a good deal of time in the gymnasium, while those who really needed the work stayed away. Sargent's problem was to reorganize the work so

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1. Dudley Allen Sargent, Autobiography, pp. 131-135.

that it would become popular enough to attract a large group. In 1874, he returned to Yale for the spring term, when the voluntary class in gymnastics was so large that there was a necessity for dividing it. The tumbling and leaping of the Yale gymnasts was excellent, and the exhibition of 1874, for the benefit of the Yale Athletic Association, presented a team of skilled performers. In 1875, in order to reach the non-athletic men, who most needed exercise, the faculty devised a plan whereby Sargent could reach the freshmen as a class. Up to this time, every freshman had been required to take an hour of Greek on Saturday mornings, but this year, the faculty allowed each freshman to choose between the Saturday morning Greek, and two thirty-minute periods of gymnasium work. Since the gymnasium work saved an hour of preparation for the Greek class, all but two or three men elected gymnasium work. The classes were divided according to their scholastic standing. The thirty-minute class work consisted of fifteen minutes of dumbbell drill and fifteen minutes of Indian club work. Since it was necessary for the men to work in their shirt sleeves, because of the lack of facilities for dressing rooms and showers, Sargent's job was to make them work, but to keep them just short of the perspiring stage. At the end of the term, a formal examination was conducted by three faculty men who judged the performers on form, accuracy, and execution.

It is interesting to note that the first division in

scholarship also placed first in gymnastic work, while the third division in scholarship placed third in gymnastic work. This was the first opportunity that Sargent had had to compare physical and mental powers, but it bore out his theories of the close relationship between body and mind.

As before stated, in September, 1875, Sargent entered the Medical School at Yale, where he found that he was too busy to give much time to the gymnasium. He continued his work as a sort of general director, teaching volunteers one hour every day, and conducting freshmen classes twice a week. He was graduated from the Medical School with an M. D. in January, 1878, but continued conducting the gymnasium work until April of that same year. Most of Sargent's time in these four months was spent in devising a system of physical education which would be adaptable to the American schools, colleges, and universities. President Porter, of Yale, discouraged Sargent in every way from taking up physical education as a profession. He not only could offer no hope of an opening at Yale, but he thought the work was unworthy of a college-bred man. Sargent wrote to a dozen or so college presidents in different parts of the country to propose a department of physical education for their institutions. For the most part, the replies which he received were polite and courteous, but he found, in 1878, that education was not ready to consider mind and body together.

Chapter III

NEW YORK

The disappointment in discovering that after such a long preparation no one was willing to let him practise his chosen profession, made Sargent realize that he would have to turn his energies toward a different field. In order to retain the title of Instructor of Gymnastics at Yale College, with the prestige it carried, he planned to continue his work with the freshmen, lecturing for an hour in personal hygiene, and following it with one hour of practical work in the gymnasium every Saturday morning. Since New York offered the most varied type of clinical work, Sargent intended to settle there. In order to acquire a most thorough and practical knowledge of the diseases which were most respective to physical treatment, he planned to attend the clinic on children's diseases in the New York College of Physicians and Surgeons, that on women's diseases at the Mt. Sinai Hospital, and that of nervous diseases with Dr. Edward Seguin. Encouraged on all sides by the medical profession in New York, Sargent determined to open a workshop in order to apply his theories of fortifying well people, rather than ministering to wrecks of humanity. After scouring New York for a possible location, he decided to rent Fifth Avenue Hall, on 24th Street near Broadway, at a yearly rental of $2000, and with the proviso that he would supply his own heat, lighting, water, and janitor service. Since it was necessary to plan his own apparatus (in those days there were no gymnasium supply houses)

he not only had to draw his own plans, but he had to have the apparatus made under his immediate supervision. Fortunately, some of this was already planned for the gymnasium at Yale, which he had hoped to see constructed. He returned to New Haven and engaged a carpenter to build long ladders, poles, bars, and special apparatus--and then continued to Portland, where he supervised construction of his iron work. In Belfast, he picked up the apparatus which he had stored there, and with the disapproval of most of his friends, he set off for New York. THE HYGIENIC INSTITUTE OF PHYSICAL CULTURE, AT FIFTH AVENUE HALL, NEAR BROADWAY, CONDUCTED BY DUDLEY ALLEN SARGENT, A.M., M.D., INSTRUCTOR PHYSICAL CULTURE AT YALE COLLEGE, was opened on November 1, 1878. His introductory circular, a paper booklet of sixteen pages--six inches long and four inches wide--fastened together with a cotton thread, embodied his theories of physical exercise.[2]

This gymnasium was an airy, pleasant room on the third floor of the building, lighted by a large skylight. The dressing rooms and bathing facilities were entirely inadequate and Sargent came to the conclusion that "every gymnasium should contain as many feet for dressing rooms, lockers, and baths as for exercising space. Without such accommodations, the exercise is unhygienic and often futile."[1] The equipment in this gymnasium consisted of the usual variety of ropes, bars, swings, and ladders as well as some of the developing machines

1. Dudley Allen Sargent, Autobiography, p. 157.
2. Unfortunately, no copy of this circular can be found.

which Sargent had evolved in Belfast and at Bowdoin. Dr. Sargent's days were very full during this year in New York. Every applicant was put through a physical examination, a strength test, and was fully measured before any exercises were prescribed. If he needed special treatment, or if he had been sent by a practising physician, the exercise was watched constantly; otherwise, he was allowed to exercise by himself according to his prescription. During the early morning, business and professional men stopped in for their regular, prescribed exercises and a rub down. Late morning saw the medical and special classes in the gymnasium. Early afternoon was occupied with consultations and examinations. At three o'clock, the children arrived and occupied the gymnasium until five o'clock. Late afternoon saw the returning businessmen, and between seven and eight o'clock was a period for consultations. The gymnasium was opened until ten o'clock for the use of the young men in the evening. Tuesday, Thursday, and Saturday were the days reserved for women.

Month after month the schedule remained the same, and the work became monotonous. Most of the cases under Dr. Sargent's care resolved themselves into some functional disturbance which could be cured with proper regulations. Sargent came to feel that from a financial standpoint he was getting a poor bargain.

> "Instead of renting a small office and charging for advice and prescriptions,...., I had to rent a large hall, furnish my own

> medicine in the form of apparatus and equipment, and depend upon the common sense of my patients to effect their cure. Furthermore, human nature finds it easier to take iron in liquid form with a spoon, than to pull solid blocks of it up and down in wooden boxes."[1]

His enjoyment of the children's classes more than made up for the constant drudgery of pushing patients to follow his prescriptions.

> "I stretched my old gymnasium net, that I had used professionally, under the apparatus where they played, so that they might tumble from the bars and swings without injury. Their bright-colored frocks, swinging to and fro in the air, their joyous high-pitched voices, their enjoyment of the play, lent a cheer and merriment to the gymnasium, which it could not reach at any other time."[2]

Even though many individuals discouraged Dr. Sargent because they would not follow the exercises prescribed, he was certain of the excellent results of his work by the change and development in most of his patients. That he gained the faith of established physicians was evidenced by the many patients whom they sent to his gymnasium for special treatment.

Sargent planned to conduct the gymnasium a second year, but when the Mallory Brothers began to negotiate for the whole building, just at the time that there was some talk of a new Harvard Gymnasium, Sargent decided to close his establishment and hope for a call from Harvard. He closed his gymnasium in June and had his apparatus dismantled and

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1. Dudley Allen Sargent, Autobiography, p. 154.
2. Ibid., p. 153.

sent to Belfast to be stored. Sargent spent the month of July preparing a series of lectures and lessons in Physical Training, which he had been invited to give in Chautauqua, in August.

Chapter IV

THE HEMENWAY GYMNASIUM

A letter from President Eliot to Dr. Dudley Allen Sargent on August 2, 1879, included the following:

> "We wish to get a person of medical education and of experience in gymnastic exercises and athletic sports to direct the department of physical training and development at Harvard....Through letters from persons who have known you, I have so informed myself, that I think it altogether probable that the position would be offered to you if the Corporation and you could agree upon terms satisfactory to both parties."

The terms which finally proved satisfactory to both parties included a yearly salary of $2000, plus the rental of the dressing-room lockers, the use of two hours daily in the forenoon for private practice in Boston, and the appointment of Sargent as "Director of the Gymnasium and Assistant Professor of Physical Training" for a five-year period commencing September 22, 1879.

Sargent's appointment to such a position was not heralded with delight from all quarters. Many of the overseers, feeling that physical training was not a profession worthy of an educated man, opposed Sargent's appointment as "Assistant Professor." When his five-year appointment was terminated, Sargent's title became simply, "Director of the Hemenway Gymnasium." The faculty objected to the investment of over one-hundred thousand dollars in anything as unnecessary as a gymnasium. Sargent made matters worse for himself by suggesting a few changes in the plans for the new gymnasium.

The Hemenway Gymnasium was completed in December, 1879, and was opened for the students' use in January, 1880. Using his medical and physical examinations, which he had developed the winter of 1878 in New York, Dr. Sargent examined any Harvard students who wished to take advantage of this opportunity.

These examinations were very thorough. Each man was asked to fill out an historical blank, was given a strength test, as described in the following chapter, and was measured in every part of his body. His heart, lungs, condition of his skin, spine, and muscle were also carefully examined. From this knowledge of the individual, a system of individual exercise was prescribed, including the amount of work, and the adjustment of the apparatus. The data obtained by means of these measurements was used in Sargent's compilation for the statue of the Typical American, which was copyrighted in 1893. As a result of the strength tests, the first of many lists of the ten strong men of Harvard was made up, in June, 1880. At the end of six months, a second examination was made to determine what, if any, progress had been made. The response to this program of individual exercise was tremendous, but the athletic program did not stop there. The heavy gymnastics enthusiasts, and the team member enthusiasts, were also active, and the first of many exhibitions was presented in March, 1880.

To understand more fully the physical equipment with which Dr. Sargent worked, I present his description of the

Hemenway Gymnasium.

"The main hall is one hundred and thirteen feet long and eighty-five feet wide, with a height of fifty feet to the ridgepole. The crossbeams which support the roof trusses are thirty-one feet high and rest upon walls about forty-five feet apart, which are supported by fourteen large arches formed twenty-five feet from the floor and by massive pillars that go down to the foundations. Through these pillars at a height of twelve feet run iron girders to the outer side walls. These girders are also made to support the gallery or running track which sweeps around the main hall inside of the pillars.

"Just off from the east side of this is a large dressing room ninety-five feet long and seventeen feet wide containing four hundred and seventy-four lockers which the architects thought, when the gymnasium was planned, would be enough for all times. Still further to the east of the dressing room are three bath rooms.

"The shower room which opens off from the centre of the dressing room towards the east contains shower baths, needle, douche, sitz, and spray baths, and a number of hose sprinklers. When the door is closed and all the hot water faucets are turned on, a Russian vapor bath can be added to the bathing facilities.

"Beneath the main hall there is a basement of equal size superficially with a height of twelve feet. The principal part of the basement is occupied by eight bowling alleys and by the numerous clothes closets or lockers that have been added since the gymnasium was completed.

"At the north end of the basement is the base-ball cage, an enclosure eighty-five feet long and thirty feet wide surrounded by wire netting. One part of this cage has never been floored over, and pitching, catching, sliding to bases, "picking up grounders," etc., can be practised through the winter on an earthen foundation. The other half of the cage is floored over so that the valuable practice of hand-ball can be added to the base-ball training.

"Just above the main hall in the space between the pillars and the east side wall is a room seventy-nine feet long and nineteen feet

wide. This is used as a rowing room and is supplied with seventeen hydraulic machines for winter practice.

"On the same story over the northeast wing is the director's office. This consists of three rooms which are used for physical examinations, keeping the records, and for consultations, etc. Here also may be found a collection of measurements, charts, photographs, books and other data pertaining to physical training that are probably not surpassed by any other gymnasium.

"At the other end of the building on the same floor over the southeast wing is the trophy or meeting room. This is twenty-six feet long and twenty-two feet wide. The walls are lined with photographs of victorious crews, ball teams and athletes, and with tablets giving the names of the Harvard students who have broken the college records in running, jumping, and other athletic events. Here also are the baseballs that have been won in games played since 1860, and the flags that were won in boat-races. The whole building contains an area over thirty-thousand square feet, one-fifth of which is now used for dressing rooms alone.

"The interior finish of the building, a matter of no little importance for a gymnasium, is of pressed brick entirely oiled, porcelain brick for the dressing rooms and bath rooms, hard pine sheathing for the side walls where sheathing is necessary and soft pine sheathing thoroughly varnished for the ceiling. The wisdom of the architects in adopting this kind of finish has been verified by experience.

"The lighting of the main hall, another important factor to be considered in constructing a gymnasium, is by two large end windows, six dormer windows, and by forty ordinary windows of different dimensions around the two ends and sides of the room. This gives in all about two-thousand square feet through which daylight is admitted. Although this light is ample for the ordinary uses of the gymnasium, it should have rendered the use of the swinging apparatus much safer if two-thirds of the light from the end windows had been let in through the roof. The difference can best be appreciated by those who use the swinging apparatus at night when the room

> is illuminated by four large gas chandeliers that shower down their light from above when the glare of the large end windows would often confuse one's judgment of objects and distance.
> .....
>
> "The ventilation of the Hemenway Gymnasium is, probably, as perfect as that of any similar institution in the country. This is obtained by means of a large cupola in the centre of the building which is an opening of thirty-seven square feet, sixty feet above the floor through which the air can pass out and eight openings through the outer walls near the floor, which allow the cold air to enter immediately under the steam radiator. Then the dormer windows are so arranged that they swing inward from the top, and as they are also high above the floor, this allows the air to circulate freely through the top of the room before coming in contact with the individual. Perhaps the best source of ventilation lies in the large cubic capacity of the main hall.
>
> "The gymnasium is heated by steam, but this is rarely turned on in the exercising hall, the custom being to keep this room cold and the dressing rooms and bath rooms as nearly at a temperature of 70° as possible."[1]

Sargent's developing appliances were installed in the Hemenway Gymnasium and attracted much publicity. He believed that if a man is not strong enough to lift his own weight, he should be given a weight he can lift. As a result of this belief, his apparatus was such that it could be adapted to the individual. His apparatus was designed essentially to be local in its application because of his belief that weak muscles should have an opportunity to strengthen by working alone. For instance, he had separate appliances for the hands, feet, legs, arms, chest, etc., all arranged so as to require concentrated attention upon the muscles to be strengthened.

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1. Dudley Allen Sargent, The Gymnasium of a Great University, The Cosmopolitan, May, 1890.

As he worked on the perfection of his apparatus, he came to realize that he had a commercial commodity. When Sargent received requests for his apparatus, he always told people that they were at liberty to take the dimensions and have the apparatus made by anyone they wished. They usually requested Sargent to have his own carpenter make them a duplicate since he had all the original designs and specifications. The Boston Gymnasium Supply Company came into existence at this time and offered to supply Sargent's apparatus to any gymnasium. However, this Company patented Sargent's equipment and then proceeded to try to prevent Harvard from using these developing appliances in the Hemenway Gymnasium. This Company caused Sargent, who had considered it unprofessional to take out patents on his appliances, a great deal of annoyance, and placed him in the position of an imposter. At a cost of $200, and much time, Sargent was able to prove priority of use because he had used a detachable pulley on an old-fashioned pulley weight in the gymnasium at Bowdoin in 1869. Thus the patent was broken. This episode caused Sargent to look into the matter of patents. Since his apparatus had been in use for more than two years, patenting them was out of the question. Several firms got patents on improvements and attachments and began manufacturing them on a large scale, but none of these firms tried to prevent Sargent from using his own equipment.

The desire to strengthen certain muscles in order to accomplish certain feats on the higher apparatus was the

original motive behind Sargent's appliances. One of the most important classes of his apparatus was that of the chest weights and pulley-weights. Of these Dr. Sargent says,

> "As a means of strengthening weak parts, correcting physical defects, and giving one an all-round development of the whole muscular system, no class of apparatus can compare with the chest weights and the numerous pulley-weight appliances. The principal reason why this class of apparatus is superior to all others as a means of muscular development is because by the use of the pulley, the weight or resistance to be overcome can be met or applied in all directions, and can readily be adjusted to the weakness of the weak, as well as to the strength of the strong."[1]

The gradation of apparatus to suit different degrees of strength was shown by the weights. Students began with "wall-parallels," attached to an upright frame standing against the wall. The second step was the sloping parallel bars and the last step was the ordinary parallels on which a student with strengthened arms could work with pleasure. There was an arm-chair-like machine in which students worked treadles to build up the muscle of the front thigh and those of the calf, or in which they used the devices to correct erratic twists or turns in one or both feet. There were sliding frames by which students lifted themselves to an angle to 45 ; there were curved boards on which students reclined and lifted weights attached to ropes and pulleys.

Perhaps the clearest way of appreciating the great variety of apparatus which Sargent had in the Hemenway Gymnasium

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1. Dudley Allen Sargent, Manuscript on Swimming.

is to visit the present Museum of Apparatus and Equipment in the Sargent College of Boston University. This Museum was set up by the Junior class under the direction of Miss Elise Nelson, Assistant Professor of Physical Education at Sargent College, in 1940-1941. I quote from the descriptions in this Museum.

The Abdominal Table

Purpose: To strengthen the abdominals such as the rectus abdominus. To strengthen muscles of the leg such as the adductors brevis and longus.

Manner Used: Sit on the table. Place the feet on the footrest, with heels on the low bar. Add toes under the upper bar. Place hands behind the head; keep body straight from hips up. Lean backward until the body is at an angle of 45° and then return to vertical position.

The Chest Developer

Purpose: To strengthen the pectoralis major, deltoid, teres major and minor, latissimus dorsi, triceps, biceps, flexor carpi radialis, flexor carpi ulnaris, flexor digitorum.

Manner Used: Face the weight box, standing directly under the pulley. Grasp the bar at the extreme ends and bring it down with both hands until the bar rests opposite the thighs with arms straight at the sides.

Finger Machine

Purpose: To strengthen muscles of the hand, fingers and lower arm.

Manner Used: Face the apparatus. Grasp the inner bar with the fingers and the outer bar with the thumbs, hand being above the bars. Bring the bars together by pressure of the thumb and fingers only, and without exertion of the arm.

Head Lifting Machine

Purpose: This apparatus brings into gentle action nearly all the muscles that move the head, neck, and trunk and brings into more powerful action the muscles that extend the legs, flex the arms, and elevate the shoulders.

Manner Used: Standing with ball on the head and back to the apparatus, the knees bent and feet four

inches apart, grasp the handles. Straighten the legs gradually regulating the weight taken by the head by the amount lifted by the arms.

Inomotor--

Purpose: Inomotor afforded a more perfect means of all-around physical exercise. Some of the objects are as follows: (1) to strengthen and develop the principal muscles in a natural way. (2) use all muscles in trunk, legs, feet, and arms to propel. (3) could be used for the reduction of fat. Came into use about 1900.

Manner Used: Sitting on the seat with feet on footrest; one leans forward and grasps hand levers. As one pulls backward he places the feet on the rest, which moves forward. Simultaneously, with pulling hand levers backward and placing the feet and pressing them, the feet make the seat be carried backward. Now hand levers are back toward the seat which is as far as possible from the footrest. As the body inclines back the footrest returns to starting position assisted by the forward position of the handle bars.

Leg Rotating Machine

Purpose: To strengthen the leg and foot muscles.

Manner Used: Sit in a chair and extend right leg straight with right foot in footrest; connect the rope on right side by hooking into ring back of footrest; turn foot to left side, keeping knee straight, return to place, and repeat on other side.

Sculling Machine

Purpose: To exercise trunk muscles and muscles that extend the thighs and legs.

Manner Used: Grasp the handle, thumbs upward with left hand above the right; stand facing the apparatus, about 30 inches from the weights with feet 20 inches apart; swing the handle to the left as far as possible without changing the position of the feet. Swing back to center and repeat. Alternate to the right.

Ship's Wheel

For arm and chest development the performer turns his back to the machine and grasps a spoke in each hand, then bends his body from right to left turning the wheel in the same direction.

May also be used for exercising the waist. Performer in this case faces the wheel, grasps a spoke in each hand and bends from side to side turning the wheel in the same direction.

Spinal Extensors — They were used for the extension of the spine. They were suspended from the ceiling or from a board. The performer put his head on the strip of canvas. Taking hold of the handles he pushed down on them. He also pushed down with his head.

Spirometer (1885-1919)

This Spirometer was used in connection with physical examinations of 15,000 Harvard students made by Dr. Sargent between the years 1885 and 1918.

It was also used in connection with the strength test. The one being tested took three deep breaths--exhaling normally on the first two. On the third the tube of the Spirometer is placed in the mouth and the breath is placed through the tube. In this manner the volume of vital capacity is indicated.

Spring Board — Used in high diving over the parallel bars. The Spring Board was propped on a boom supported by two iron standards. A running approach and a two-foot take off was used. The performer then vaulted over the parallels.

Travelling Bar

Purpose: To strengthen muscles around the shoulder girdle such as the pectoralis major and minor, latissimus dorsi. Also to strengthen the following muscles--serratus magnus, rectus abdominus, biceps, brachialis, and triceps.

Manner Used: Face the apparatus. Grasp the bar with hands about 10 inches apart, thumbs under, and wrists over. Bring the bar down to the full extent of the arms; keep it as near the body as possible with head erect, and shoulders thrown back. As the bar rises again, inflate the lungs slowly and fill to their utmost capacity. Hold breath and bring bar down again.

Travelling Parallels

Purpose: To strengthen muscles of the upper back such as deltoid, pectorales major and trapezius,

to strengthen arm muscles, biceps and triceps.

Manner Used: Place yourself between the bars with back to weight box. Grasp the handles with thumbs and fingers outside about five inches from the end with head erect, faced forward, shoulders back, and elbows extended at the sides diagonally backward; push the bars downward until the arms are extended.

The Wrist Machine

Purpose: To strengthen the muscles of the arms, forearm and hands.

Manner Used: Face the apparatus. Grasp the center of the roller with both hands, fingers over and thumbs under; turn the roller toward you.

Position as in the first part with left hand over and thumb under, and right hand under with thumb over. Turn the roller toward you. Alternate hand positions.

Dr. Sargent believed that physical education equipment should be scientifically the best, be manufactured flawlessly and be attractive and hygienic. He felt that the physical education profession should recognize the importance of material things and encourage the patenting of professional inventions.

At a meeting in Brooklyn in 1885, Dr. Sargent was elected one of three vice-presidents in the newly formed organization, "American Association for the Advancement of Physical Education." In 1890, he was elected President and held the same office in 1892-1894 and 1899-1901. Dr. Sargent was very active in the "Society of Directors of Physical Education in Colleges" from its inception in 1897, serving as its President in 1899.

Throughout his career at Harvard (1879-1919) Dr. Sargent was interested in nationwide physical education in all its many phases. He wrote widely not only on his anthropometric

measurements and charts, and his strength tests, but also on all kinds of topics relating to physical education. He wrote a great deal against the excesses in athletics, against the abuse of military drill in the public schools, and against other measures which he considered unwise. He even went so far as to make the statement that he thought trousers for women were more hygienic than skirts. For this statement he was widely attacked by the newspapers. His manuscripts were not at all on the negative side, however. He wrote widely on such subjects as swimming, rhythm, physical training, games, and many of his own inventions, such as Battleball. One of his most valuable publications is "Handbook of Developing Exercises," Boston, 1882, which contains his statements on diet, sleep, rest, bathing, as well as a graduated set of exercises for his developing appliances.

Method and system were two unknown words in Dr. Sargent's life. Mr. Clarence B. Van Wyck, Secretary of the Department of Physical Education at Harvard, says that Dr. Sargent's large, black walnut desk would be piled high with papers, and the Doctor would work in a small space cleared directly in front of him. Occasionally Mr. Van Wyck would attempt to bring order out of chaos by clearing off and filing papers on the Doctor's desk. The Doctor always declared he never could find anything unless it was left exactly where he put it. Dates meant nothing to Dr. Sargent, and of all his original manuscripts, letters, and personal letter which he left, less than one-tenth are dated.[1]

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1. See page 54 for another example of lack of system.

Sargent came to Harvard at a time when the physical education profession was in its infancy--when it was considered unworthy of an educated man. In 1919, when he left, physical education had become an accepted part of education--in fact, it was obligatory for freshmen. How pleased he would be today to know that Harvard was one of the first Universities to make physical activity obligatory four times weekly for every student studying within its walls.

Chapter V

STRENGTH TESTS

Dr. Dudley Allen Sargent was extremely interested in measurements of the human body. His tables of body proportions, his compilations of measurements leading to the statue of the typical American student, and his great interest in the subject of Anthropometry are well known. After working for ten years among students and athletes, he came to the conclusion that body size and measurements alone did not furnish sufficient data upon which to pass a judgment of man's physical power or working capacity.

> "There is in the composition of many individuals an unknown equation that makes for strength which can only be brought out by an actual test or trial....But a test of muscular power alone does not give one any knowledge of a man's ability to repeat his efforts....his staying powers or endurance."[1]

The Intercollegiate Strength Test

The Intercollegiate Strength Test was developed by Dr. Sargent during his early years at Harvard, was stabilized in 1886, and was adopted by the College Gymnasium Directors Society in 1897. The strength tests used in making up the total strength of any individual were composed of the following:

1. Strength of back

   The apparatus used for this test consisted of a spring dynamometer of a capacity of 900 kilos attached by a chain or bolt directly to the floor with a handle between 1 and 1½ inches in diameter

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1. Dudley Allen Sargent, Strength Tests and Strong Men at Harvard, Physical Education Review, Volume II, p. 108.

and not over 12 inches long. The individual to be tested inclined the body forward about 60°, grasped the handle, took a deep breath, and without bending the knees gave one hard, steady lift, mostly with the back.

2. Strength of legs.

The same apparatus was used for the leglift. The individual to be tested stood with the body erect, chest thrown forward, bent the knees until the handle grasped with both hands rested against the thighs, took a deep breath, and gave one hard, steady lift, mostly with the legs, using the hands to hold the handle in place.

3. The forearm test.

The apparatus used for this test consisted of an oval-shaped spring dynamometer of a capacity of 110 kilos. The individual to be tested held the dynamometer in his hand with the dial turned inward and squeezed the spring as hard as possible. The squeeze of the right hand and then the squeeze of the left hand were noted the same way.

4. Strength of lungs.

The apparatus used for this test consisted of a spring manometer of the steam-gage pattern with a registering capacity of 40 hectograms. The individual to be tested filled his lungs to their utmost capacity and blew a strong steady blast into the apparatus, and the highest point attained by the indicator was noted.

5A. Strength of upper arm--push ups.

The apparatus for this test was the parallel bars which stood at least 5 feet from the floor and 18 inches apart. The individual to be tested took a position of rest on the parallel bars, supporting the weight with the arms straight, and let the body down until the chin touched a tape suspended 3 inches above the level of the top of the bars, then raised the body until the arms were fully extended. This was repeated and the number of times the body was raised from the first time the chin touched the cord was noted.

5B. Strength of upper arm--pull ups.

The apparatus used for this test consisted of a

horizontal bar, between 1 and 1 3/4 inches in diameter, suspended 8 feet from the floor. The individual to be tested grasped the bar and hung with arms and legs extended at full reach. From this position the number of times he raised his body so that his chin was on a level with the top of the bar was noted.

6. Total Strength

The points which made up the total strength were added as follows:

(1) Kilos lifted with the back.
(2) Kilos lifted with the legs.
(3) Strength of R hand grip.
Strength of L hand grip.
(4) Expiratory power.
(4A & B) 1/10 body weight in kilos multiplied by the number of pull ups and number of push ups.

At Harvard a man was put through this test and the results were computed and given to him on a card before he left.[1] The card as shown in Figure 3 in the Appendix divided the total strength into groups from A to G so that an individual could compare his strength to that of others.

Standards for each of the athletic events were also set up. Candidates for crew, football, and weight throwers were expected to make a total of 700 points; track, baseball, class crews, gymnastic and wrestling candidates were expected to make a strength-test total of 600 points; University lacrosse and cricket and tennis-team aspirants were expected to make a total of 500 points. Dr. Sargent believed that prescribing a limit for members of different athletic organizations made a candidate keep himself in good condition all year 'round, kept out the weak but zealous men, gave the mass of men a standard toward which to strive, and lessened the relapses of

1. Reproduction of the card in Figure 3 in the Appendix shows the total strength divided into groups from A to G so that an individual could compare his strength to that of others.

an acknowledged athlete.

This test was used by a great many colleges and was the basis of picking the fifty strongest men in Intercollegiate contests. It forms the basis of the Physical Fitness Index (P.F.I.) Test offered by Dr. Frederick Rand Rogers. However, Sargent's criticism of it--1. the expense of the dynamometers and apparatus limited the use of the test to a few colleges and institutions rich enough to afford it, and, 2. great strain was brought to bear in the lifting test upon a small group of muscles, and increased the blood pressure caused by holding the breath during the effort of lifting--was his incentive to work out a test which measured strength without the use of apparatus.

Universal Test For Strength Speed and Endurance

This test, according to Sargent, had several advantages. First, it was extremely simple, requiring little or no apparatus; second, it brought into action all of the large groups of muscles in both trunk and limbs,--subjecting no one muscle group to a severe strain; third, it furnished an exercise and a test for heart, lungs, and nervous system as well as the muscular system; fourth, it was a test which could be tried at any time, anywhere, and did not require expert supervision.

The test consisted of the following exercises:

1. Exercises for the abdominal muscles: "Elbows to knees"

   Lie in a horizontal position on the floor, with arms flexed and fingertips touching the top of the

shoulders. Bring the body to a position so that the elbows will touch the knees keeping the legs as straight as possible and the fingers still touching the top of the shoulders. The feet may be placed under an article of furniture, which will assist in keeping them down.

2. Exercise for the arms and back: "Pull up"

   Support a wooden stick or wand about 30 inches from the floor or just high enough to allow the body to clear the floor when supported at arms' length. Hang from the bar grasping it with palms toward the face, arms fully stretched, legs bent at an angle so that the feet are directly under the knees. While maintaining this position, pull with the arms until the chest touches the bar.

3. Exercise for the arms and chest: "Push up"

   Lie on the floor face downward, body in a line with the thighs, and legs bent at right angles. Let the hands, placed between 16 and 26 inches apart, rest upon two blocks of wood about 4 inches thick. Keeping this same relative position of body and legs, push the weight up by the arms and continue until they are straight, then lower the body until the chin is on a level with the top of the surface of the wooden blocks, and continue the exercise.

4. Exercise for the extensors of the back and hamstring muscles: "Fingers to the floor"

   Stand with feet about 12 inches apart, trunk bent well forward, legs straight as possible, and arms extended so that the backs of the fingers touch the floor just back of a real or imaginary line drawn between the heels. From this position swing the arms directly forward until they are in line with the body; then bend at the hips, bringing the body through the vertical position, finishing the exercise with the body bent backward and fingers clenched well above the head.

5. Exercise for the lower leg or calf muscles: "Rise on toes"

   Stand upon the heels with the toes raised from the floor. Now rise on the toes until heels are about 3 inches from the floor and return to starting position.

6. Exercise for the muscles of the thighs: "Sit on heels"

Flex the legs and thighs and sit on the heels, holding the trunk and head in an upright position, with arms and fingers extended forward. Now rise to a standing position with arms bent at a right angle, shoulders thrown back, and fingers clenched.

In taking this test the individual had to take the exercises in the order given, doing each exercise as many times as possible. However, only thirty minutes was allowed for the whole test, counting the time the individual took to rest between exercises. The test was computed as follows:

1. One-half total weight in pounds multiplied by one-half total height in inches and this product multiplied by the number of times the body was lifted. Divide this product by twelve to reduce it to foot-pounds.

2. One-half total weight in pounds multiplied by length of arm in inches. Multiply this product by the number of times the body is pulled up and divide by twelve to reduce it to foot-pounds.

3. Compute the same as for number 2.

4. One-half total weight in pounds multiplied by one-half total height in inches. Multiply the product by number of times exercise is completed; divide by twelve when you have the result.

5. Total weight in pounds multiplied by three inches and this product multiplied by number of times weight is raised on toes and heels as one exercise; divide product by twelve.

6. Total weight in pounds multiplied by one-half height in inches and multiply the product by the number of times the weight is lifted. Divide this product by twelve.

Add the number of foot-pounds for each exercise. The total sum is the number which determines your speed, strength, and endurance combined--or your physical fitness or efficiency. Divide your total number of foot-pounds by the time consumed in making the test and the result will be your speed in foot-

pounds per minute. The card for recording this test is reporduced in Figure 4 in the Appendix.

Sargent's criticism was that this test did not try the heart and lungs sufficiently to afford a good test of endurance. Although his first-published articles about this test appear in 1902, and we know that the test was used both at Harvard and at the Sargent Normal School, I can find no record of its being used much after 1910. Of course, the test used a great deal of time, and while it may have been economical of apparatus and money, it squandered time to such an extent as to be impractical. I did find mention of the fact that often Dr. Sargent would divide a class in half, having one group record for the performing members, and then the groups would change places. The test seems to have died a natural death.

The Physical Test of Man
or
The Pep Test

Dr. Sargent worked on this test at his own Sargent School, and in some of the School Alumnae magazines during the years, 1919-1921, are requests to his graduates to use this test on one hundred or more of their students and send him the results. The test is a very simple one: the individual to be tested stands under a cardboard disk, or paper box cover, heavy and stiff enough to hold its form, about twelve inches in diameter, (when the doctor first began experimenting with this test he used a tin pie plate!) held or suspended from ten to twenty inches above his head. He is then requested to bend forward,

flexing the trunk, knees and ankles, and then by a powerful jump upward, straightening the legs and spine, to try to touch the cardboard disk with the top of the head. When the disk has been placed at the highest point above the head that can be just touched in jumping, this height is measured. The height of the jump is found by subtracting the height of the body from the height of the cardboard disk. Later, this was simplified still more by having the individual jump in front of a graduated scale upon which the shadow is thrown. Two observers can notice the height to which his shadow attains.

Of this test, Dr. Sargent says:

> "No one would deny that the ability to project one's weight twenty or thirty inches into the air, against the force of gravity requires strength on the part of the muscles engaged in the effort. No one would deny that the effort would have to be made with a certain degree of velocity or speed in order to create impetus enough to carry the body twenty inches above its own level in the standing position.
>
> .....
>
> "I think, therefore, that the test as a whole may be considered as a momentary try-out of one's strength, speed, energy and dexterity combined, which in my opinion, furnishes a fair physical test of a man, and solves in a simple way his unknown equation as determined potentially by his height and weight."[1]

A great deal of statistical work was done on this test, not only by Dr. Sargent, but also by Ledyard Sargent, his son. The conclusions are as follows:

> "1. In the case of both men and women above high school age, the jump is, statistically speaking, independent of both height and weight.
>
> .....
>
> "3. In the case of widely differing groups of

1. Dudley Allen Sargent, The Physical Test of a Man, School and Society, Volume XIII, No. 318, January 29, 1921, pp. 128-135.

> persons, a high correlation was found between athletic and gymnastic ability, on the one hand, and the 'jump' on the other.
>
> .....
>
> "6. Both mechanical considerations and statistical observations indicate that the test is not a measure of strength alone, but rather a combination measure of strength, speed, coordination, and will power."1

> "This test is precise; it cannot be beaten by any trick of execution; it is suitable to a wide range of ages of both sexes; it involves the greater part of the important body muscles, including the posture group; and it is so simple that it can be performed almost by anyone, anywhere, at any time."2

Dr. Frederick Rand Rogers in his book, "Fundamental Administrative Measures in Physical Education," published in 1932, says that the Sargent Physical Test of a man has some possibliities as a single measure of "general athletic ability" but that it lacks reliability.

Charles Harold McCloy, in his book on Tests and Measurements in Health and Physical Education, has a chapter on the Sargent Jump, which is the "Physical Test of a Man" that Dr. Sargent presented in 1921. On the basis of his studies, McCloy concluded that the Sargent Jump correlated highly with track and field events and thought that it might be used as a predictor of track and field abilities, especially when combined with age and size or with some measure of strength. In another article, McCloy writes,

> "The Sargent type jump is not the one perfect test--but it is probably the one best test we have for

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1. Ledyard Sargent, Some Observations of the Sargent Test of Neuromuscular Efficiency, American Physical Education Review, Volume XXIX, No. 2, February, 1924.
2. Ibid., p. 10.

predicting the explosive energy (power). If used in connection with other tests, its results may well be of great usefulness in a program of physical education."1

1. Charles Harold McCloy, Studies in the Sargent Jump, Research Quarterly, Volume III, No. 2, May, 1932, p. 242.

Chapter VI

THE HARVARD SUMMER SCHOOL OF PHYSICAL EDUCATION

Because of the scarcity of teachers of physical education in the 1880's, many newly built gymnasiums were placed in charge of individuals who had received little or no professional training, and who were reluctant to give up lucrative positions in order to obtain more technical knowledge. Considering all the factors involved, Dr. Sargent decided that a Summer School of Physical Education, especially planned for teachers already in service, would prove the best practical solution. His recommendation that teacher-training courses in physical education be added to the Harvard Summer School curriculum met with opposition. However, he did receive permission to use the buildings for such a course provided that he would assume all financial and other responsibilities for the conduct of the school.

Accordingly, in 1887, Sargent sent out a four-page circular announcing the "Summer Course of the Physical Training School for Teachers, at the Hemenway Gymnasium, Harvard University," with the tuition for the five-weeks' work in theory and practice $50. When the session opened on July 6, fifty-seven students enrolled--thirty-nine women and eighteen men. This first session was such a success that the following year physical education courses were added to the list of studies offered by the Harvard Summer School. Although the department was put on a budget, Dr. Sargent was permitted to

direct this department as the "Harvard Summer School of Physical Education."

The Harvard Summer School of Physical Education grew slowly, but surely, under the wise leadership of Dr. Sargent, who secured the best teachers available. These teachers were divided into three groups--lecturers having charge of the theory courses, instructors having charge of the practice courses, and student assistants giving such service as they were qualified to render in return for their tuition. The School was fortunate in being able to secure quantity as well as quality in its faculty. During the first ten years of the Summer School, the average attendance was less than ninety, while the average number of teachers during the same period was twenty-seven. During these early years, Dr. Sargent added new courses gradually, but it was not until 1899 that a graded program was introduced. In order to qualify for a certificate under this new program, students were required to spend two summers in residence. In 1902, because of President Eliot's encouragement, Dr. Sargent extended the graded program to cover four summers. This was done with apprehension, for the additional expense of the added courses, and the extended time necessary for the degree, carried no assurance that students would be willing to sacrifice the extra time and money. These fears were soon proved groundless, for the average attendance of the first ten years of this four-year program was one-hundred and fifty, surpassing by fifty students the average attendance of the first ten years of the school.

This expansion of the program to four summers meant a taxing of all facilities, and so, in 1910, the third- and fourth-year classes in theory and in practice were held at the Sargent School of Physical Education. In 1918, all classes were held at the Sargent School,[1] because the Hemenway Gymnasium had been turned over to the Navy Department and was used as barracks for its Radio Training School.

During the early years of the Summer School, Dr. Sargent was prepared to teach any of the theory courses for which no lecturer was available, but in later years, he confined his teachings to courses in Prescription, Anthropometry, and Applied Anatomy.

After forty years of service, Dr. Sargent retired from his position at Harvard, in 1919. The Summer School was under the direction of William H. Greer until 1924; Daniel Kelley was director for the summer of 1925; and Dr. Charles H. Keene held the position until the school was discontinued in 1932.

Dr. Sargent believed that teachers of physical education should have a thorough knowledge of anatomy and physiology, and in his Summer School, great emphasis was placed upon the instruction in these subjects. The first catalogue of the school states in its requirements for certificates:

> "In every case the applicant must pass a satisfactory examination in all of the work prescribed, and have taken a degree from a medical college in good standing in order to receive a full certificate."

Although this requirement of a medical degree was not

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1. See Chapter VII.

in effect after the first year, it reflects the need for men who were well versed in the basic science of anatomy and physiology. Dr. Sargent's belief that a successful teacher of physical activities must not only understand his work, but must also possess ability as a performer himself, led to the organization of the practice program on a basis which provided intensive training in games, in dancing, and in all forms of light and heavy gymnastics. Four summers of work with eight or nine months between each summer to practise that work produced some very proficient performers. Each summer an exhibition of practice work was held during the final week. The popularity of these exhibitions was shown by the crowds of twelve-hundred to fourteen-hundred spectators which they attracted. Dr. Sargent believed that the time necessary to prepare these exhibitions was well spent, not only in training the participants how to organize such an exhibition, but also in its education of the public.

In the mind of Dr. Sargent, the aims of physical training at the time of the Harvard Summer School's birth were four--1. Hygienic, 2. Educative, 3. Recreative, and, 4. Remedial. Dr. Sargent says,

> "In the scheme which I have adopted, the Hygienic Aims of Physical Training are placed first, for the topics included under the head of Hygiene have to do with one's self-preservation, and personal well-being, and must necessarily influence all other aims and motives."1

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1. Dudley Allen Sargent, Harvard Summer School of Physical Training, 29-page manuscript, p. 2.

As a result of his belief in the importance of this aim, Dr. Sargent stressed the fact that the summer school students had to go through the physical training, and experience the results in themselves of correct habits of living, before they could successfully teach such facts to their own pupils. While the educative aims of this type of work presumed health, it attempted to maintain a balance between the mental and physical forces. The recreative aim was measured by the vigor with which a student returned to his work. Dr. Sargent says that recreation is an act of duty, undertaken for the sake of the subsequent profit which it insures, and he defines it as, "that which with the least expenditure of time, renders the exhausted energies most fitted to resume their work."[1] The remedial aim dealt with the restoration of disturbed functions and the correction of physical defects and deformities.

Dr. Sargent groups the means he employed to accomplish these aims into six departments in the Harvard Summer School. 1. Gymnastics was divided into light gymnastics, including exercises performed with light portable apparatus such as dumbbells, Indian clubs, wands, balls, etc., and heavy gymnastics, including exercises performed upon fixed or heavy appliances involving the support of the body by means of the hands, arms, or legs. Pyramids and tumbling were also grouped under this first heading of gymnastics. 2. Athletic Sports

1. Ibid., p. 4.

included those sports representative of track and field. 3. Plays and Games included all forms of tag, impromptu contests, and gymnastic games such as Battle Ball, Pass Ball, Three Deep, etc. 4. Free Movements included exercises which were done without apparatus, calisthenics, and various forms of dancing. 5. Developing Appliances included the use of those appliances used as a means of developing different muscles. 6. Medical Gymnastics and Massage included the study of massage as well as the study of how and what to prescribe in the way of exercise for specific needs.

The functioning of the school can best be seen in a description by Dr. Sargent in his article on the Harvard Summer School of Physical Training.

> "....a visit to the Hemenway Gymnasium during its Summer session. There is a formal lecture at 9 o'clock bearing upon the Physiology, Philosophy, and Hygiene of Physical Training. At 10 o'clock there is a practical talk or demonstration in Applied Anatomy and Animal Mechanics, or a special lecture on Testing the Senses, Spinal Curvature, The Relation of Body and Mind, Massage, and kindred subjects of great importance to the teacher of physical training. At 11 o'clock, the practical work of the gymnasium begins with a general class exercise: dumbbells, Indian clubs, wands, etc., being used, in which the greater portion of the school participates. After the first exercise, the class is broken up into small divisions or squads, which follow some special line of instruction for twenty-minute periods on the apparatus, with German or Swedish gymnastics, or in Fencing, Boxing, Wrestling, and Tumbling for the men and in some numerous forms of light gymnastics and calisthenics for the women, until 1 o'clock.
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> "At half-past two the class assembles again for another lecture on Anthropometry, Physical Diagnosis, or First Aids to the Injured. At half-past three the men of the class attend a thirty-minute talk on Athletics and the various methods of training and then go directly to the field and track where the

> various athletic events are taught and practised until 5 o'clock. During this period the women as a class are devoting their attention to Dancing Calisthenics and the so-called Aesthetic movements or gymnastics. Throughout the afternoon small squads under their respective leaders or teachers are practising measuring, plotting charts, copying notes, learning the use of the developing apparatus, swimming, hurdling, bicycling, or playing crickett, baseball and other sports and games."[1]

The value of the Harvard Summer School of Physical Education can best be shown by the fact that students living at a distance--as far as California--were willing to invest the time and money required for the Harvard Certificate. Its annual registration was not phenomenal in terms of a summer's registration in any physical education school today, but the geographical distribution of that registration, and the positions held by its student body was unusual by any standard. The Harvard Summer School of Physical Education thoroughly established physical education on an educational basis, not only in most colleges, but also through state legislation providing for physical education in public school systems.

In pioneering in this field, Dr. Sargent said,

> "No one expects a person to learn as much in five weeks as he would in as many years, but he can at least discover what he wants to learn, and carry away enough in his notebooks to keep him busy in elaborating and developing for many months."[2]

Throughout his connection with the Summer School, he attempted to impress upon his students the limitation of their work and the desirability of working closely with physicians.

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1. Dudley Allen Sargent, Harvard Summer School of Physical Training, p. 15.
2. Ibid., p. 17.

In the last paragraph of his Autobiography, Dr. Sargent states,

> "I feel that this course (the Harvard Summer School of Physical Training) did more to further the cause of physical education and to make a homogeneous group of people familiar with its purposes and ideals than any other single influence."

Chapter VII

THE SARGENT SCHOOL AND CAMP

In 1881, the Society for Collegiate Instruction of Women, then familiarly known as the Harvard Annex, and now known as Radcliffe, called upon Dr. Sargent to organize a Department of Physical Training for their students. In order to accommodate them, he opened a gymnasium on the corner of Brattle and Church Streets. The Harvard Annex paid only five-hundred dollars, less than one-fifth of the running expenses, for the construction and for the use of the building; therefore, Dr. Sargent opened the gymnasium to the townspeople of Cambridge. To fill the call for physical training teachers needed in the many gymnasia which sprang up throughout the country, Dr. Sargent advertised that he would be glad to take a few pupils without payment of tuition, if they would be willing to devote themselves for one year to the study and practice of physical training with the idea of becoming teachers. It must have seemed too good to be true, for it attracted few of the people who inquired about it. Although there were six women who started the course, all but one left after the first few months, feeling that they were able to take a teaching position. The one pupil, Jennie B. Wilson, remained to be graduated in 1882, and was offered a paid position to remain the following year. Miss Wilson stayed with the Sargent School, first as instructor, and later as Dean of Girls, until she retired in 1922.

Due to the great number of Cambridge women and children who came to the gymnasium, a larger building was necessary.

Since Dr. Sargent felt that the prime requisite for a gymnasium was a central location which would make it possible for people to use it frequently as they came and went, he moved to the corner of Church and Palmer Streets over a large carriage house, in 1882. He convinced the owners of this carriage house to build a mansard roof [1] over the edifice, to be paid for in rent. It is interesting to note here that it was Josephine Bolger's (class of 1924) grandfather who owned the carriage house and who advanced the payment of this roof out of his own pocket. This new building Sargent named, "Sanatory Gymnasium." [2]

Although for the first ten years the purpose of the Sanatory Gymnasium was to provide physical training facilities for the Annex, Sargent established a one-year normal course for teachers, and at the end of 1891, his normal school grew to include thirty girls. In this year, the normal-school course was lengthened to two years, which doubled the attendance. Since the Annex--or Radcliffe--had been given a gymnasium of its own, and since Sargent held an unexpired lease, the Sanatory Gymnasium evolved into a professional training school. With the two-year curriculum, more space was needed, and in 1891 Dr. Sargent leased the upper story in a two-story building, which

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1. A diagram of this building is reproduced in Figure 6 in the Appendix.
2. An early circular, undated, is reproduced in Figure 8. Figure 9 shows the influence of associates for it is dated November 1, 1888.

was back of the gym on Palmer Street, to use for classrooms. Although soft coal, smells from the livery stable below, burning leather, clangs from the blacksmith's shop, and noises from the machinist's files did not form the sweetest accompaniment to Sargent's lectures, the loyalty and comradeship, which are apparent today in the Sargent School, found their origin in that queer little building.[1] The girls alternated in gathering around close to the wire-protected stove at one side of the room during Sargent's lectures, and in steering clear of the same stove during games and exercises. The entrance to the gymnasium was a wooden-covered staircase called the Hen-Run, but even this did not dampen the spirits of the girls who dared to take part in physical training during its beginnings. In many of the early catalogues, prominence was given to courses on the planning and construction of gymnasia, in and out of doors, as well as rope splicing and construction. The 1894 catalogue (one of the earliest available) describes the daily schedule as lasting from nine o'clock to twelve-thirty, with occasional afternoon practices in special exercises and class drills.

"OBJECTS"

> "The objects of this school are to drill young women in the theory and practice of Physical Training in its broadest acceptation, and prepare them to teach in this much neglected branch of education. No rigid system is adhered to; in the opinion of the director the condition of the individual determines the selection, time, and amount of exercise, and the student is taught the

1. A floor plan suggesting the arrangement of this early building is reproduced in Figure 7 in the Appendix.

value of all movements and efforts according to the most approved anatomical and physiological tests, and shown how to apply them for the improvement of the individual. This method involves a careful study of the normal standard, and the variations therefrom, for each class, sex, and age, and a familiarity with a great variety of exercises in order to meet the wants of different conditions.

"Special Treatment. In addition to these objects which are mainly for the education of the teacher, the school aims to furnish a course of carefully prescribed exercises, under personal supervision, to those who are in poor health and in need of special treatment; to provide a system of recreative and developing exercises for those who wish to build up their physique and keep themselves in vigorous condition; and to furnish a series of aesthetic movements as a means of attaining poise, grace and suppleness."

"REQUIREMENTS"

"Students entering the Normal Course should be at least eighteen years of age, have good health, a sound physique, and a high-school education or its equivalent.

"Those wishing to enter the second year's course can do so by passing examinations on the studies and exercises of the first year. Graduates from other Normal Schools of Physical Training, in good standing, will be accepted without examination."

"COURSES"

"While not debarred from spending a shorter time at the school, no one is advised to give less time to a preparation for teaching than the two years covered by the regular courses; these, however, will be extended over a longer period of time to meet the requirements of students pursuing other courses of study."

"FIRST YEAR"

"The course for this year is especially intended to prepare students to give instruction in public schools, and institutions where there are no gymnasiums fitted up with the usual apparatus."[1]

1. Sargent School catalogue, 1894.

Theory in this first year consisted of Anatomy, Physiology, and Physics, while the practice work included special exercises on Dr. Sargent's developing appliances, all forms of light gymnastics and calisthenics, games, voice training, Delsarte and relaxing movements, and methods of conducting squad or class exercises. The second year was described as preparation of the student for giving instruction in gymnasia which were thoroughly equipped with modern appliances.

When the Sargent School had become an established reality, Dr. Sargent thought it time to give the school a seal. The original seal was designed and executed by Frederick LeRoy Sargent, a friend of Dr. Sargent. The seal is built up around the combined initials S.S. (Sargent School) which are crossed to form a swastika. The swastika is a universally-accepted symbol of welfare often used as a sign of luck. Taken apart, each of the letters forms itself into the famous 'curve of beauty' significant of grace. The diamond-shaped shield upon which the swastika, made up of the two curves of beauty, is placed, was used in heraldry for unmarried women. Below the shield are two entwined olive branches, tokens of victory, and used in Greece in connection with the worship of Athena, who was goddess of learning. The olive branch is also a token of peace and plenty--a peace secured, though, only through the use of knowledge and through victory. Above the shield is the school motto--"service, loyalty." The name, Sargent, means serving, and was borne by officers, especially valuable to the crown for their loyalty.

These two words and the olive branches form a wreath around the shield. The circumference of the whole seal contains the words "Seal of the Sargent School for Physical Education" with a small pierced star or rowel, which signifies the spur of a high ideal.

In 1903, another year was added to the curriculum. At this time the costumes described as "usually worn" were "a blouse waist and divided skirt which could be made at a cost of about five dollars." [1] Since this naturally resulted in a great diversity of costumes, the next year a regular costume was adopted, and the catalogue states that the Cambridge dressmakers would supply the material and make up this suit for seven dollars.

Because of the feeling on the part of the graduates and teachers of the Sargent School that the old building was not worthy of the work being done, Sargent was induced to build, much against his own inclinations, on the present site of the school on Everett Street. The building was erected, in 1904, on the site of the former Jarvis Field House, a rooming house owned by Dr. Sargent, and, the school was moved to its present quarters. Although the new building was but one gymnasium in depth, it had classrooms on the second floor and a second gymnasium on the top floor. In 1914, a new gymnasium was added with two new classrooms overhead, and in 1930, a fifteen-thousand dollar laboratory was added.

The Student Government Association was established in 1907.

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1. Letter to Miss Russell, November 2, 1934.

It proved to consist of a board of ten whose chief capacity was that of policemen. In 1912, this Association changed from an oligarchy of ten to a democracy of two-hundred and fifty, and has remained a democratic institution ever since. The Athletic Association was established in 1908 for the purpose of encouraging athletics and a sporting spirit.

The Sargent School policy was determined from its beginnings in 1881 by Dr. Sargent's motto--"Influenced by all, biased toward none. Safe-guard for ever being tempted to follow any new-fangled fad blindly, or to refuse to accept something new merely because it is new." He believed that the American people should benefit by the combination of the best from the European nations. The strength-giving gymnastics of the Germans, the active qualities of the English sports, the grace and suppleness of the French calisthenics, the poise and precision of the Swedish free movements all were admired by Dr. Sargent and adapted by him to the needs of the Sargent girls.

Outdoor sports and athletics became part of the program of the Sargent School in 1906. Norton Field, on Oxford Street, was used for hockey, track, and field athletics, and for team games, each fall, until the Andover Theological Seminary bought the field for the erection of its new buildings. In 1910, Dr. Sargent made arrangements to use the Riverside Recreation Grounds on the Charles River. Although the program was arranged so that the girls spent certain mornings at the field, the time consumed in getting back and forth, and the general pressure and rush which this plan entailed, convinced Dr. Sargent that the

arrangement was anything but ideal. There were several choices to remedy the situation. The school year could be lengthened to include two months for activity alone, a camp could be used for the outdoor sports, or a field could be obtained nearer the school. By 1910, Dr. Sargent was convinced that a large field for sports and swimming facilities were needed for the school, andhe commissioned Dr. Louis R. Burnett, an instructor at the Sargent School, to look for a camp site while taking an auto trip through northern New England. Although Dr. Burnett returned with glowing accounts of several places, Dr. Sargent, being conservative, could not be induced to inspect personally any sites until after the summer school of 1911.

On Wednesday, September 20, 1911, Dr. Burnett, and Dr. Sargent, visited Hayward Poultry and Apple Farm, four miles from Hancock, New Hampshire. They found an ideal level field of twenty-five acres, surrounded by a heavy growth of pine and white birch, which would furnish a perfect site for camp activities. On the property was a farm house and a large barn. Adjacent to the property was a small half-moon shaped pond, now named Half Moon Lake.

> "Both enthusiastic. Returned to Antrim Hotel for the night. Big clock on adjacent church struck every hour; kept Dr. Sargent awake. He arose and sat at window several times." [1]

The following day they revisited the farm and picked possible sites for the main buildings and the boat house.

In the fall of 1911, Dr. Sargent called a conference of some of the faculty, including Dr. Louis Burnett, Mr. Carl Schraeder,

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1. Dr. Louis R. Burnett, Diary, September, 1911.

Mr. Bertel Willard, and Miss Jennie B. Wilson, and told them of his proposal to buy the farm for a camp site. They were offered the opportunity of investing in the Corporation which was to be formed. The camp stock was apportioned to original subscribers with Dr. Sargent retaining 51 per cent, Mr. Willard and Dr. Burnett each holding the next largest share, and Mr. Schraeder and Miss Wilson having smaller amounts. Several others invested amounts ranging from four hundred dollars to one thousand dollars. During the winter of 1911, farm and camp machinery and supplies were bought. Ice was cut from the lake. A deep artesian well was drilled. The main building, now known as the Senior Bungalow, and what is now "Lodge B", were rushed to completion. The roadway along the lake was replaced to allow for the making of a beach. The area of the present tennis courts was filled with stumps, and these had to be removed. A dozen kahki tents, 12' x 14', provided sleeping quarters.

The plan worked out was for the months of June and September to be added to the regular school term. These months were to be spent at the Sargent Camp in such a rotation that four camp sessions, two Junes and two Septembers, should be included in the three-year training course. The camp was to be used for outside campers ranging from twelve to twenty-one years of age during the months of July and August. Although, in June, 1912, attendance was voluntary, sixty girls took advantage of the opportunity to go to the camp. Summer camp opened on July 4, 1912, with eighteen campers

During the first years of the camp, Eastview (Harrisville) Station was used as the railroad terminal, but the better facilities for handling transportation in Peterboro gradually made Peterboro the town centre for camp life.

Here, at Peterboro, Sargent found the type of camp he wanted. It had the combination of athletic fields and camp features for which he had searched. It had a small private lake large enough for swimming, diving, canoeing, and boating. It had tennis courts and game fields. It offered opportunities for training in winter sports. This camp constituted an important factor in revolutionizing camping from an individual rough life to an organized camp movement. It was one of the first camps to be built with running water, flush toilets, drainage system, electric lights, and to be equipped with regulation cots, with springs and mattresses.

The first kiosk, or "K" as it came to be called familiarly, was built in 1913, and others were added at different times. The Junior end of camp was built during the winter of 1915-1916 and Junior Camp was first opened for the summer of 1916. These "K"s and the main building, which is U-shaped with an indoor and outdoor fireplace, were designed by Dr. Burnett. The Sargent House was built in 1916 to be a home for the Sargent family.

Dr. Sargent spent all the time that he could spare at the camp, but he came for relaxation, and not as an administrator. Dr. Burnett acted as camp director and Mr. Willard as the business manager.

A house in the treetops was built for Sargent

in the pine grove just east of the main building so that he could have a place that was quiet. From this retreat Dr. Sargent could overlook the entire campus. This house in the trees is being kept as a memorial shrine to Dr. Sargent. In the years between 1913 and 1918 Dr. Sargent enjoyed pitching horseshoes. He was, according to Dr. Burnett's description, very accurate in his play, and insisted on measuring the position of the shoes with a caliper measure.

The camp spirit which Sargent considered so important had its beginnings back in the year 1912, when camp first opened, but it is still apparent among Sargent campers today.

> "Living next to nature not only tries out and develops our mental and physical abilities as individuals, but also gives us an opportunity to study and practise at first hand some of the social, domestic, moral, civic, political and religious virtues which is the basis of our present civilization....To learn to get along together is the great lesson of life.
>
> "It is going through mild trials and tribulations together and enduring to the end that helps establish the truest friendships and furnishes the foundations for an enduring loyalty. It is in co-operating to meet physical, mental, or moral issues of any kind together for the good of the whole that the true camp spirit has its best chance for growth and expansion." [1]

At the end of the school year, the Sargent girls gave an exhibition of the practical work which they had been doing in their class work throughout the year. These demonstrations were opened to the public and attained such popularity that the Hemenway Gymnasium was no longer large enough to accommodate the spectators. On May 26, 1911, the first Arena demonstration was held at the Boston Arena.

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1. Dudley Allen Sargent, Camp Spirit, Sargent Quarterly, Volume VIII, No. 3, October, 1923.

These programs [1] were held each year until 1919, when it was discontinued because of the expense. In 1925 and 1926, Arena was revived and then discontinued because the Arena burned. On May 26, 1932, "Arena" as it is known today was revived. For the first time since its inception, in 1911, admission was charged. Seats ranged from fifty cents to two dollars in cost, and the proceeds went to the unemployed of Cambridge and Boston. Due to the heavy expense evolved in both time and money in preparing and presenting such a large program, Arena demonstrations were put on a biennial basis. Starting with the Arena demonstration on May 11, 1934, proceeds have been used for the Dudley Allen Sargent Scholarship Fund. [2]

The last male students at the Sargent School of Physical Education were in the class of 1913. The School never had had more than a few men in scattered classes. Since there were no facilities for large numbers of young men, it was decided to drop them entirely.

Twiness Society was founded as a Senior Honorary Society and was presented as a gift to the School by the class of 1921.

> "Twiness Society signifies Sargent Spirit. It originated from the double S in the center of the Sargent Seal....For the glory of Sargent "our idea" was born with the hope that theold spirit of service and loyalty would take on a new meaning and that a new spirit of thoughtfulness and high ideals should result. She who would represent Twiness must have proved herself worthy from the standpoint of Profession and Behaviorism. Through the medium of these two attributes she stands for the ideal spirit

1. Second Arena Demonstration, May 13, 1912, is reproduced in Figure 10.
2. Last arena to date was given March 27, 1942.

> of Sargent School, one that is not only worthy to represent that spirit, but one who is also a worker, ready to serve for the advancement of the school that the founders of this society love to the extent of devotion." [1]

Ledyard Sargent, Dr. Sargent's only son, was instructor in physics and chemistry in the school in the second decade of the twentieth century. In 1914, he became a permanent administrator of the school as Assistant to the President.

> "How fitting that in Dr. Sargent's later years, he and his son should be closely affiliated and that the Sargent name, which means so much to the cause of sane education throughout the whole world, will be inscribed for many years to come on the front line banner." [2]

In 1920, Ledyard Sargent took over more of the responsibilities which Dr. Sargent was glad to relinquish and became Vice President and Director. Mrs. Etta Sargent, Ledyard's wife, became associated with the school as Dean of Girls in 1922, with the retirement of Miss Wilson. Dr. Sargent still gave his time and energy to his school and it was not until the very end that he admitted failing health. He spent the month of June, 1924, at his dearly beloved camp where he was most contented. On July 21, 1924, Dr. Sargent died in the Sargent House in Peterboro, New Hampshire. His death left a big gap in the school, but fortunately there were Mr. and Mrs. Sargent to perpetuate his work.

Dr. Sargent started his career with visions; he ended it with realities. His visions were exemplified in his training school which still lives on. The Sargent spirit is one that will never die. The graduates of

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1. Sargent Quarterly, Volume VI, No. 3, October, 1921, p.8.
2. Mary Macomber Longfellow, '97, Fiftieth Anniversary, 1919, p. 30.

his school are in every state of the Union, and in many foreign countries, influencing innumerable lives through their work and their contacts. Wherever there is a Sargent graduate, there is a bit of the Sargent spirit which makes this school stand out from all other schools of physical education--and the Sargent School still marches on.

Mr. and Mrs. Sargent directed the school during its most crowded years. During these years enrollment increased and many changes occurred in the physical education field. Competition was keen. Universities, colleges and junior colleges began to offer courses in physical education, leading to degrees. Although the Sargents recognized the superiority of their training over the almost elementary courses in physical education given in some of the small colleges, the status of the Sargent graduate was not equal to that of the graduate with a degree after her name.

In 1927, Mr. Sargent's poor health caused him to form a corporation which relieved him of some of the care of conducting the school.

In 1929, Mr. and Mrs. Sargent decided that the time had come when a four-year program leading to a degree had to be offered to those preparing to teach physical education in schools and colleges. So, in July, 1929, they offered the school to Boston University as a memorial to Dr. Sargent. Boston University accepted the gift with its condition that the name of Sargent be perpetuated by the University, and that the instruction be continued in the spirit of the founder. This accounts for the continuation of the spirit, tradition, and individuality of Sargent College at the same time that it

exists as an integral part of a great university.

In the two years spent under the administration of Dean Wilde, of the School of Education, and the direction of Mr. Ernst Hermann, Sargent School became stabilized with the adoption of a four-year program leading to the degree of Bachelor of Science in Education. The 1929 September Camp session was held at the Sargent Camp under a business arrangement. During the fall of 1929, Boston University bought the Sargent Camp in Peterboro, New Hampshire, for the continued benefit of the Sargent School. The camp at this time covered a large tract of land containing approximately three-hundred acres, and a small frontage on Half Moon Lake. In 1931, Boston University added one-hundred acresof land and acquired all the land around Half Moon Lake. This addition insured the complete privacy of the camp through control of the entire water front and made the property many times more valuable than it had been up to this time.

Many additions and improvements were made in camp and school equipment. In 1930, a new fifteen-thousand dollar laboratory was built on the top floor for the girls to use in connection with their Physics, Chemistry, Biology, and Anatomy classes. A new dormitory was built during the summer of 1931 on the site of the old 1593-95 Massachusetts Avenue dormitory. This new building housed one-hundred and fifty students and was built in such a way that it can easily be converted into an apartment house, should the need arise. Last, but not least, entrance requirements were raised.

Mr. Ernst Hermann was appointed Dean of the Sargent College of Physical Education, Boston University, when the college was

made a separate department of the University in 1934. In 1940, Dean Hermann retired and the school again came under the direction of the School of Education, with Dean Jesse B. Davis acting dean, and Dr. Nelson S. Walke as Director. The next year, Dr. Walke was appointed Dean of the Sargent College of Physical Education, Boston University.

Chapter VIII

SUMMARY

Dudley Allen Sargent was born in Belfast, Maine on September 28,1849. His father died when he was seven years of age and it became necessary for him to help support his mother and the rest of his family. His various jobs included farming, lumbering, mill work, care of horses, masonry, and rough carpenter work. His greatest difficulty was in gaining the opportunity and the time to acquire an education. He attended the Belfast High School and was graduated from the Brunswick High School in 1871, two years after he had become Director of the Gymnasium at Bowdoin College. He earned his A.B. from Bowdoin in 1875 while directing the college gymnasium.

His early tastes included a love of reading and a fondness for all sorts of mechanical devices, but it was his special fondness for gymnastics and athletics that led him to choose physical education as his life's work.

In 1878 upon graduation from the Yale Medical School where he had been Director of the Gymnasium, Sargent found that no school or college was ready to consider the training of the body as a part of education. This lack of opportunity to practise in his chosen profession did not deter Sargent. He opened a private gymnasium in New York where he applied his theories of fortifying well people through special exercise. This gymnasium attracted much attention

through the publication of the book, "HOW TO GET STRONG AND STAY SO", by William Blaikie, who was a great admirer of the work being done by Sargent. After one season in New York, Sargent was called to Cambridge to become Director of the Hemenway Gymnasium of Harvard University, a position he held until his retirement in 1919.

It was here that Sargent did most of his important work. Although he had begun experimenting with his apparatus before arriving at Harvard, it was at the Hemenway Gymnasium that so many pieces were perfected. He gave his inventions freely to anyone who was interested. His interest in Anthropometry was shown by his careful measurements of thousands of his students both at Harvard and at his own school, and his charts are still of value. From these measurements he compiled a typical American Male Student and a typical American Female Student, and the resulting statues were copyrighted in 1893.

On April 7, 1881, he married Ella Fraser Ledyard. He had one son named Ledyard. In none of his many writings does he ever mention his marriage or his wife.

In 1881 he opened a gymnasium for the use of the Harvard Annex. Since the Annex did not completely pay for the running expenses of this gymnasium, Sargent opened it to the Cambridge townspeople. Its popularity necessitated a larger building so in 1882 Sargent moved to the Sanatory Gymnasium on the corner of Church and

Palmer Streets, where he remained until 1904. The first normal school student was graduated in 1882, and in ten years the normal school grew to include thirty students. In 1891 the Normal Course was lengthened to two years which doubled the attendance, and the Sanatory Gymnasium became primarily a professional training school. In 1904 the Sargent School of Physical Education was moved to its present site on Everett Street. In 1912 Dr. Sargent added the Sargent Camp in Peterborough, New Hampshire, for the use of the Sargent students during the months of June and September.

Dr. Sargent organized the Harvard Summer School of Physical Education in 1887. It filled a need for teachers in service and grew slowly but surely to become one of the great influences upon the development of physical education.

Because Sargent felt that body measurements alone did not furnish sufficient data upon which to pass a judgment of man's physical power or working capacity, he worked continually to devise a test which would estimate a man's strength. The Intercollegiate Strength Test was developed by Sargent during his early days at Harvard, was stabilized in 1886, and adopted by the College Gymnasium Directors Society in 1897. Since this test required expensive apparatus which prohibited many institutions from using it, Sargent worked out the Universal Test for Strength, Speed and Endurance, which

required no apparatus. This test consisted of a series of six simple exercises which brought into play all the important muscle groups of the body. Because this test took so much time (one half-hour per person) it was not used after 1910. The Physical Test of Man or the Pep Test Dr. Sargent developed at the Sargent School. This test required an individual to jump as high as he could from a squat position. Dr. C. H. McCloy has done some further work on this test.

Although Dr. Sargent wrote widely on many topics, was active in various organizations, directed the Hemenway Gymnasium, the Sargent School, the Harvard Summer School of Physical Education, and the Sargent Camp, he still had time to know his students by name. In reading his diary for March, 1900, which is available intact, one wonders how anyone could accomplish so much. In spite of his accomplishments Dr. Sargent lacked method and neatness. Very few of his many articles, circulars, personal letters or business letters are dated. In fact it is almost impossible to arrange his papers chronologically. He disliked having anything filed, for he claimed he never could find anything. He preferred to let things pile up on his large black walnut desk so that he had only a small cleared space in which to work.

Dr. Dudley Allen Sargent prepared himself for a career in a field which was not considered worthy of an educated man. Although he was a pioneer in the field of physical education, he lived to see this field occupied by men and women of ability and education. He lived to see education of the body

raised from ostracism and neglect to its rightful place as a part of the general educational scheme.[1]

The Sargent School has always displayed the spirit and loyalty which are so apparent in any group of Sargent graduates today. In 1929, when the school was given to Bostn University by Mr. and Mrs. Ledyard Sargent, provision was made that the name Sargent would be retained and instruction continued in the spirit of the founder. The school now has become a separate college of the University andis manifesting an ever-continuing growth. It is an acknowledged leader in the field of physical education; its graduates are widely sought as instructors.

The death of Dr. Sargent in 1924 saw the passing of a great figure in physical education, but he will never be forgotten because of his precepts which are embodied in the Sargent College of Physical Education of Boston University.[2]

1. R. Tait McKenzie, Reprint 1924, p 5.

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Dr. Sargent's original manuscripts may be found:

In the archives of the Widener Library of Harvard University.

In a box in the Sargent College Library.

In the basement of Sargent College.

In the attic of Sargent College.

APPENDIX

BOWDOIN COLLEGE
GYMNASTIC EXHIBITION

Friday Evening, Nov. 24, 1871

D. A. Sargent, Director

PROGRAMME

Orchestra.....Selections

Dumb Bell Exercise.....Class
A. L. Crocker, Leader
Flying Rings.....Ladd and Crocker
Horizontal Bars.....Snow, Ladd and Sargent
Contortion Act.....J. A. Cram
Balancing Trapeze.....D. A. Sargent

Orchestra.....Selections

Trick Tumbling.....Snow, McNulty, Crocker, Ladd and Sargent
Magic Ladders.....Hatch, Snow, Ladd and Sargent
Indian Club Exercise.....Class
F. S. Waterhouse, Leader
Double Trapeze.....Sargent and Hatch
Posturing and Pyramids.....Company

FIG. 1. -- BOWDOIN COLLEGE GYMNASTIC EXHIBITION

BOWDOIN COLLEGE
GYMNASTIC EXHIBITION
for the benefit of
BOWDOIN NAVY
at Lemont Hall, Brunswick,
on Friday Evening, April 3, 1874

D. A. SARGENT, Director

PROGRAMME

Orchestra.....Selections

Dumb Bell Exercise
Select Divisions from '77.....W. Stepheson, Leader
Parallel Bars.....Clarke, Gerry and Swasey
Suspended Rings.....Payson, Perry and Wells
Batule Board Leaping.....Bolster, Cobb, Newcomb, Payson, Peary, Sargent, Stanwood, Stayell, Wells and Wright
Double Somersault.....A. G. Bolster
Double Trapeze.....Greene Brothers
Magic Ladders.....Bolster, Payson, Perry, Wells and Williams

Orchestra.....Selections

Triple Bars.....McPherson, Sargent, Stanwood, Stayell and Williams
Heavy Weights.....Hunter and Newcomb
Posturing
(Introducing the "challenge trick" of the world-renowned Hanlons.).....Bolster, Clarke, Payson Sargent, Wells and Williams
Indian Club Exercise.....S. L. Larrabee, Leader
Select Divisions from '75
Double Eschelle.....Bolster, Sargent and Stanwood
Pyramids

FIG. 2. -- BOWDOIN COLLEGE GYMNASTIC EXHIBITION FOR THE BENEFIT OF BOWDOIN NAVY

No.....Date.....

Name.....

Age.....	.		Girth Up. Arm R..	.
Weight.....	.		" " L..	.
Height Standing.	.		" Fore Arm R..	.
Girth Head.....	.		" " L..	.
" Neck.....	.		Strength Chest...	.
" Chest.....	.		Capacity Lungs...	.
" " Full.	.		Strength Lungs...	.
" Ninth Rib.	.		" Back....	.
" " Full.	.		" Legs....	.
" Waist.....	.		" R.F. Arm	.
" Hips.....	.		" L.F. Arm	.
" Thigh R...	.		T " Up. Arm.	.
" " L...	.		B " Total...	.
" Calf R....	.		Temperature.....	.
" " L....	.		Barometer.....	.

FIG. 3. -- INTERCOLLEGIATE STRENGTH TEST

..... HARVARD UNIVERSITY No.....

Hemenway Gymnasium, Cambridge, Mass., ,19 .

Mr.....

Group.....	Individual Rank.....	
*1000 + ...	Capacity of Lungs.....	————
A =800 to 1000	Strength of Lungs.....	
B =700 to 800	Push up.....	Back.....
C =600 to 700	Pull up.....	Legs.....
D =500 to 600	Weight.....	R. f. Arm.....
E =400 to 500		L. f. Arm.....
F =300 to 400		Chest & U. Arm————
G =200 to 300		Total Strength.....

Director.

FIG. 3A. -- INTERCOLLEGIATE STRENGTH TEST AND MEASUREMENTS

F. P. ..... UNIVERSAL TEST for STRENGTH, SPEED, AND ENDURANCE No. .....

Group..... Sex.....

Name.....Nationality.....Occupation.....

HARVARD UNIVERSITY.....Place.....Date.....

Age.....Height.....Weight.....Length of Arm.....Cir.....Res.....

No.	Exercises	Weight lifted	Height lifted	Times lifted	Time for each Exercise		Foot Pounds	Time of beginning
1	Abdomen Elbows to Knees				m	s		
2	Arms and Back Pull up							Thirty minutes allowed to complete test
3	Arms and Chest Push up							
4	Back Fingers to Floor							
5	Legs Rise on Toes							
6	Thighs Sit on Heels							
Order of Exercises	Totals							
	Time of Ex. Time of Rest	Strength and Endurance		Speed F.P. per minute			Physical Efficiency	Time of ending

.....Witness.....Examiner

Official Test Card, D. A. Sargent, Cambridge, Mass.

FIG. 4. -- UNIVERSAL TEST FOR STRENGTH, SPEED, AND ENDURANCE

Foot Pounds..... UNIVERSAL TEST for STRENGTH, SPEED, ENERGY AND DEXTERITY Index.....

Group..... Sex.....No. .....

Name.....Nationality.....Occupation.....

Inst. .....Place.....Date.....

Meas. and Wt. with Clothes.....

Age....Height.....Weight....Chest Girth.....

Meas. and Wt. without Clothes.....

Exercise	Height of Disc	Standing Height	Height Jumped	Ratio Jump to Height	Body Weight	Inch Pounds	Foot Pounds of Work	Index
Perpendicular Jump, Head to Disc	Inches	Inches	Inches		Pounds			
Date								
Date								
Date								

FORMULAS 1. Height of Disc − Standing Height = Height Jumped
" 2. Height Jumped × Body Weight = Inch Pounds
" 3. Inch Pounds ÷ Twelve (to reduce to feet) = Foot Pounds
" 4. Height Jumped ÷ Total Height = Ratio of Height Jumped to Height
" 5. Height Jumped × Total Weight ÷ Total Height = INDEX

.....Witness.....Examiner

Official Test Card, D. A. Sargent, Cambridge, Mass.

FIG. 5. -- PHYSICAL TEST OF A MAN, OR, PEP TEST

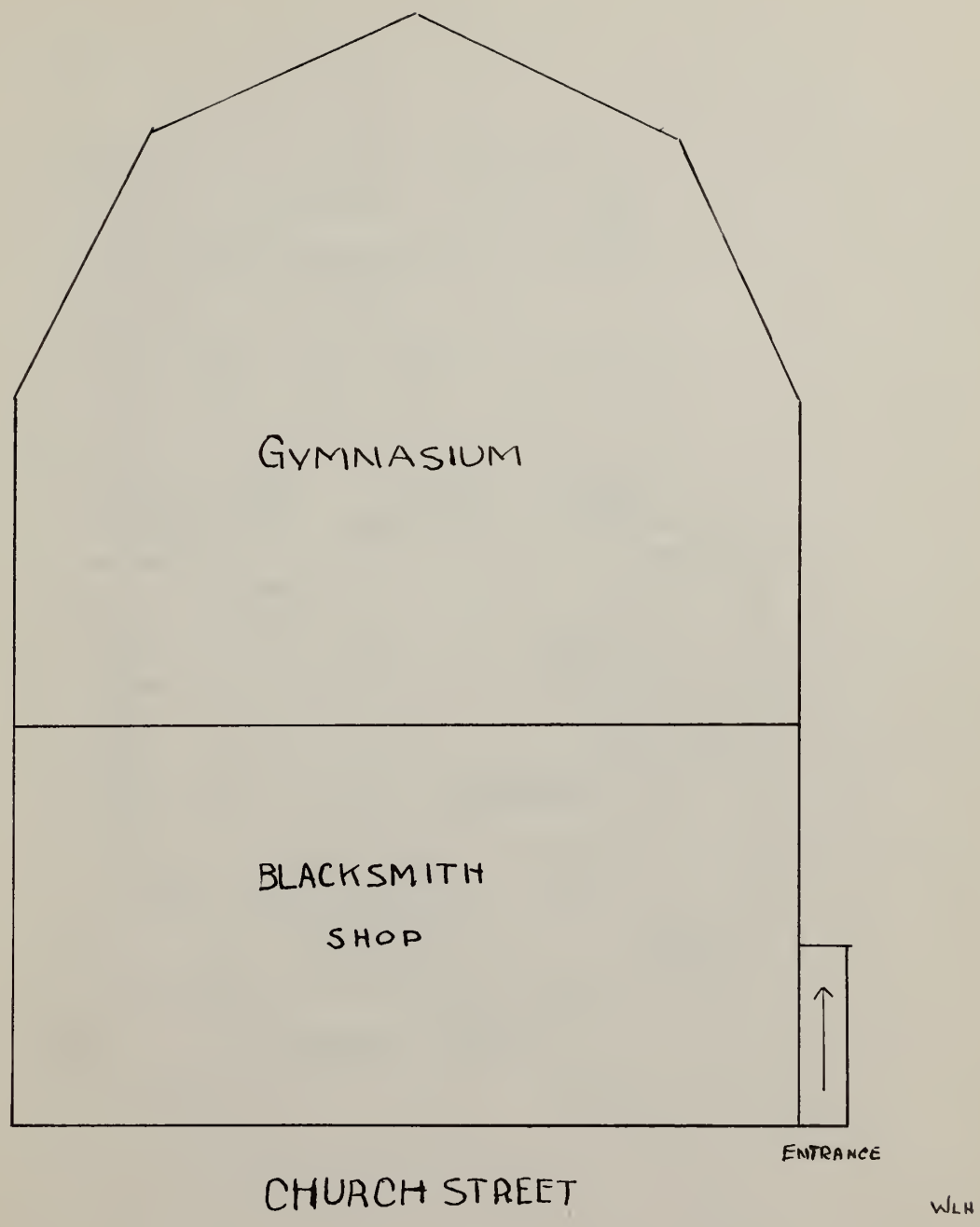

FIG. 6. -- THE SANATORY GYMNASIUM SHOWING THE MANSARD ROOF

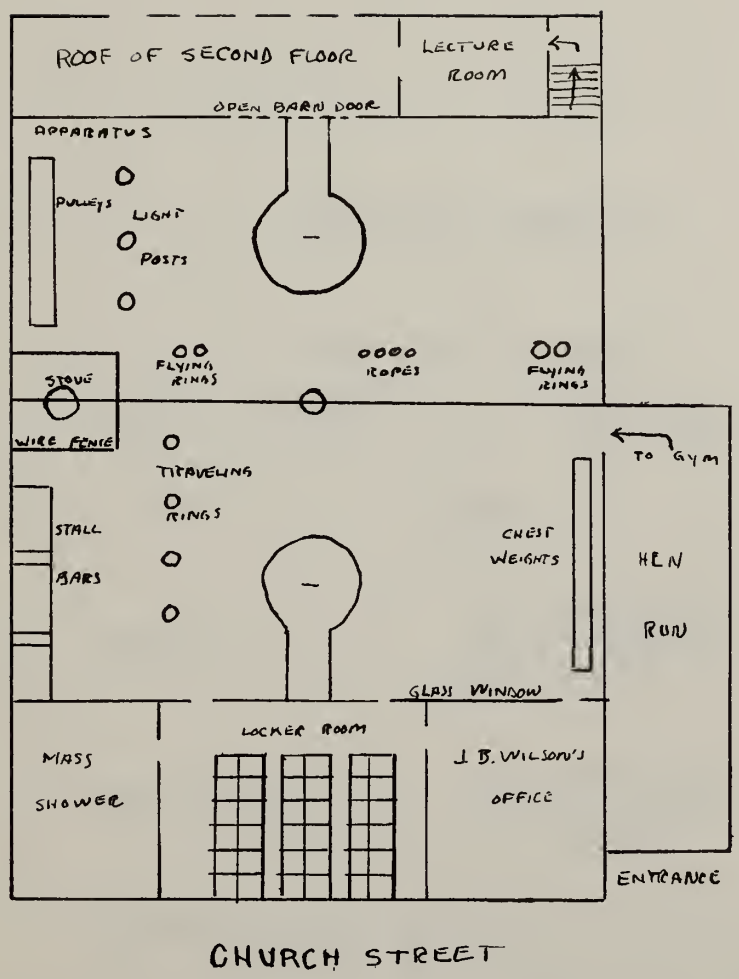

FIG. 7. -- FLOOR PLAN OF THE SANATORY GYMNASIUM

SANATORY GYMNASIUM

for

Women and Children

Church Street.....Cambridge, Mass.

TERMS:

Women:--	For the Season,	$25.
	Three Months,	15.
	One Month,	8.
Children:--	For the Season,	$20.
	Three Months,	12.
	One Month,	6.

Special Terms to Schools and Families.

DR. D. A. SARGENT,
Medical Director.

FIG. 3. -- EARLY CIRCULAR FOR THE SANATORY GYMNASIUM

SANATORY GYMNASIUM
-for-
Women and Children

Church Street.....Cambridge, Mass.

This Gymnasium will be opened November 1, 1888, for the Harvard Annex.

A few hours a day will be reserved for private pupils, and the patronage of those desiring to enter upon a systematic course of physical training is solicited.

The Gymnasium will be open daily from 9 A.M. to 5 P.M., and will be in charge of two pupils of Dr. Sargent.

Regular classes will be formed to suit the convenience of members.

Hours for individual practice and instruction will be arranged for upon application.

Limited classes will be formed for those desiring to be together.

TERMS

WOMEN:--	For the Season.....	$25.00
	Three Months.....	15.00
	One Month.....	8.00
CHILDREN:--	For the Season.....	$20.00
	Three Months.....	12.00
	One Month.....	6.00

Special terms will be made to schools and families.

Applications for membership in any of the classes are to be made to Miss Orriette H. Oxford, Sanatory Gymnasium, Cambridge, Mass.

****

We refer by permission to

Mrs. Louis Agassiz
Mrs. Ole Bull
Mrs. John Brooks
Mrs. Benjamin Vaughan
Miss Alice Longfellow

FIG. 9. -- CIRCULAR FOR THE SANATORY GYMNASIUM, 1888.

ANNUAL EXHIBITION
of
ATHLETICS, GAMES, DANCING AND GYMNASTICS

Saturday, May 18, 1912, 8 P.M.
at the Boston Arena, by pupils of

The Sargent School for Physical Education
assisted by some of the masters and pupils
from the Cambridge Public Schools

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ORDER OF EXERCISES

1 Wands.....Seniors
2 Dancing.....Juniors
3 School Exercises.....Freshmen
4 Improvised Heavy Apparatus.....Juniors
5 Drive Ball.....12 Cambridge Schoolmasters
6 Folk Dancing.....Seniors
7 Vaulting Exercise.....Three Classes

Including a contest in Spring-board Vaulting and the Swinging High Jump. In this competitive event, each pupil will be judged not only on the height attained, but on the ease, grace, poise, self-command, and perfection of form shown in executing each style of vaulting and jumping.

8 Dumb Bells.....Seniors
9 Athletic Free Exercises.....Freshmen
10 Marching Tactics.....Seniors
11 Indian Clubs.....Juniors
12 Organized Recess.....200 children from the Cambridge Schools
13 Dancing.....Seniors
14 Wall Scaling.....Juniors vs. Freshmen
Seniors vs. Winners

*This contest is to determine which class can put its team of twelve members over the top of the twelve foot wall in the shortest time. Each of the above classes by an unusual combination of agility, strength, courage and skillful team-work, has accomplished this feat in less than 30 seconds.

FIG. 10. -- SECOND ARENA PROGRAM, 1912.